PRODUCTION AND MARKETING SYSTEMS

FOR

RAW MILK IN SASKATCHEWAN

A Study of Existing Systems

with

Discussion of Potential Alternatives

and

Recommended Options

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The consultants listed above do not necessarily agree with all of the recommendations put forward in this report. Full responsibility for all recommendations must be assumed, however, by EXP Consulting Limited.

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EXECUTIVE SUMMARY

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The Contract

The study was conducted between September 15, 1985 and January 16, 1986 by EXP Consulting Limited under a contract with the Saskatchewan Department of Agriculture.

The terms of reference directed the consultants to study the present status of, and alternative solutions available respecting:

(1) control of the production and marketing of raw milk;
(2) the management of production quotas;
(3) methods of determining farm production costs;
(4) the status of farm separated cream; and
(5) Saskatchewan's share of the national market for industrial milk.

Recommendations were required on each problem studied.

Methodology

An assessment was made of the way in which administrators, processors and producers view problems related to the various items in the terms of reference. These interviews included eight administrators, three processors, a random sample of 39 producers and a further selected sample of ten producers.

Related programs and policies in other provinces were reviewed for information on potential alternatives and as part of a general search for useful program and policy ideas. Information gleaned from other provinces plus the ideas and concerns gleaned from Saskatchewan interviews were analyzed and tentative proposals were drafted.

Draft proposals were reviewed with all segments of the industry and with specially selected expert consultants. The draft was subsequently modified to incorporate some of the information, ideas and new proposals which grew out of the process of rechecking with industry representatives and special consultants.

Findings and recommendations

The most important issue is management of quota. Seven provinces have adopted a buy-sell policy to enable movement of quota among producers. Saskatchewan remains one of three provinces where all quota is owned by the Milk Control Board (M.C.B.) and movement of it among producers is achieved by regulation. However, the existing regulations leave room for farm to farm deals where quota moves with the deal. As a result, cattle and facilities being purchased are taking on inflated values giving quota an indirect value which is impossible to identify precisely.

The report concludes that buying and selling quota on a demand and supply basis is likely to have harmful effects on the industry.

A "paper asset" is created when quota is traded on the market and it is recommended that Saskatchewan can and should avoid this situation. A firm policy to be determined by producers which can be administered objectively by the M.C.B. is recommended. It is further recommended that this policy be established by regulation.

A retirement fund for dairy farmers based on a small levy on receipts and administered by the M.C.B. is recommended as a companion to quota management regulations. This will provide funds at the time of retirement which will compensate to some extent for the lack of value in quota being turned back to the M.C.B.

Milk Purchasing and Transportation policies rank second in importance. The study concludes that policies are required to give producers a choice of the processor to whom they wish to sell and that a competitive approach must be developed for the trucking of milk. Recommendations are made to achieve these objectives.

The membership of and organization of the M.C.B. is also seen to require modification. The report recommends that the Milk Control Act and regulations be rewritten to enable producers to elect an advisory committee to the M.C.B. with each processor appointing a representative to a processors advisory committee. Provision for both committees and their terms of reference are recommended to be included in the regulations. Appointment of a more business management oriented M.C.B. without either producer or

processor representation is recommended. These recommendations are designed to ensure appointment of a Board whose members have the training and experience required to enable them to manage the control aspects of the industry, including processing and retail pricing.

Farm cost of production determination at present is found to be too slow and too expensive. A composite index of a small number of cost indicators, for which reliable figures are available, is recommended.

The study concludes that producers of farm separated cream are recognized by the fluid milk sector of the industry, to have a right to share in further development and improvement of all aspects of the industry. Recommendations are made toward achieving this goal.

Finally the report notes that Saskatchewan has roughly four percent of national population and only two percent of national Market Share Quota (M.S.Q.). Drastic action by Saskatchewan to immediately try to recover lost M.S.Q. or to achieve a more balanced relationship between share of national M.S.Q. and share of the national population is seen to be inadvisable and is predicted to be unproductive. Instead, recommendations suggest that a carefully prepared proposal be made to slowly achieve a more equitable situation as an increase in national markets increases the amount of quota available. This approach is seen to have

potential to improve Saskatchewan's M.S.Q. share because it does not require reduction of existing quota in another province.

Implementation of Recommendations

Before any action is taken toward implementation of recommendations, consultation with producers and processors is advised. This consultation should ensure that the recommendations are understood and that the proposals are refined so as to achieve industry objectives as precisely as possible. The Milk Control Board and the Government will be required to assist in the consultative process and, in some cases, pass judgement on proposals resulting from consultation.

If producer objectives can be satisfactorily determined prior to having an elected producer advisory committee, quota policy recommendations could be implemented without acceptance of any other recommendations.

Most of the remaining recommendations would be best handled after the Milk Control Act has been rewritten and reorganization of the Milk Control Board has been completed.

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PART I

INTRODUCTION

Total milk production in Saskatchewan has fallen from a peak of 827.7 million kg in 1944[1] to under 227.3 million kg in 1985. In 1944, Saskatchewan produced 18 million kg of creamery butter plus another 2.68 million kg of farm butter compared to about 5 million kg of both creamery and farm butter in 1984.[2] During this period, fluid sales increased only slightly but now stand at about 103 million kg (the highest to date).[3]

While Saskatchewan's dairy industry has shrunk to a mere 27% of its former peak, the Canadian dairy industry has held at very nearly the 1944 peak of 7,994.2 million kg. The figure for total Canadian production in 1984 is 7,683.868 million kg.

Saskatchewan was one of the last provinces in Canada to begin converting the industrial milk segment of the industry from farm separated cream to fluid milk. Even today about 16% of Saskatchewan's industrial milk production is marketed in the form of farm separated cream. This compares with 3.6% for Ontario and

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[1] Stats Canada, Dairy Stats. Pub. No. 23-201

[2] Stats Canada Pub. 23001, 1984.

[3] Sask. Milk Control Board 1985.

19% and 8.5% for our neighbouring provinces of Manitoba and Alberta, respectively. (Table 1)

Saskatchewan entered the National Milk Market Sharing Program in 1972 and was awarded 7.6 million kg of Market Share Quota (M.S.Q.) when production was only 5.1 million kg at that time. This province was given three years to achieve this level of production before the national formula would begin shrinking Saskatchewan's M.S.Q. back to the actual amount being used.[3] However, instead of increasing to meet the quota available, Saskatchewan's industrial milk production continued to decline to a low of 3.6 million kg in 1976-77 according to M.C.B. figures (Table 2).

During the early 1970's grain farming was considered a good alternative to the more constant demands of dairy farming. During this period, therefore, the incentive to search for alternative income sources was not as great as in 1985.

When the Saskatchewan dairy industry failed to meet the challenge of utilizing available M.S.Q., unused M.S.Q. was gradually lost and now has stabilized at roughly 4.4 million kg. This is only 60% of the opportunity which existed just 13 years ago.

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[3] National Milk Market Sharing Agreement, 1972.

TABLE 1

FARM SEPARATED CREAM DELIVERIES
AS A PERCENT OF TOTAL M.S.Q. BY PROVINCE[1]

PROVINCE	PERCENT OF PROVINCIAL M.S.Q. UTILIZED FOR FARM SEPARATED CREAM
British Columbia	*
Alberta	8.5
Saskatchewan	16.0
Manitoba	19.0
Ontario	3.6
Quebec	*
New Brunswick	10.0

[1] Compiled from a survey of provincial agencies.

* Less than one percent.

TABLE 2

TOTAL YEARLY MARKET SHARE QUOTA ALLOTTED & UTILIZED IN SASKATCHEWAN AND CANADA[1]
(1972 - 73 to 1984 - 85 DAIRY YEARS)

	SASK MARKET SHARE QUOTA			CANADIAN MARKET SHARE QUOTA		
YEAR	ALLOTTED	PRODUCED	%	ALLOTTED	PRODUCED	%
1972/73	7.6	5.1	67.1	216.0	155.5	72.0
73/74	7.6	4.5	59.2	216.0	156.9	72.6
74/75	7.2	3.6	50.0	216.0	151.6	70.2
75/76	6.7	3.9	51.3	203.1	178.3	87.8
76/77	4.0	3.6	90.0	159.6	155.4	97.4
77/78	4.2	3.8	90.0	167.6	165.2	98.6
78/79	4.3	3.9	90.1	164.6	160.0	97.2
79/80	4.4	3.5	79.5	169.2	163.5	96.6
80/81	4.4	4.1	93.2	175.3	167.5	95.6
81/82	4.6	4.3	93.5	176.0	175.0	99.4
82/83	4.4	4.4	100.00	168.2	174.4	103.7
83/84	4.5	4.6	102.2	171.4	173.4	101.2
84/85	4.4	4.46	101.4	170.5	172.8	101.3

[1] Source - Saskatchewan Milk Control Board.

Lack of quota to satisfy the production objectives of dairy farmers is the most pressing problem today. It grew out of Saskatchewan's struggle to utilize available quota. Production had begun increasing when quota began decreasing and in 1982 the two trend lines crossed. This caused the first significant over quota penalties to be levied on Saskatchewan dairy producers at a time when many producers continued to believe there was no limit on available quota. As a result, many producers were caught short of the scale of operation they had originally planned to achieve for full production efficiency.

Fortunately, in spite of the shock of paying over quota penalties for the first time, the Saskatchewan dairy industry has remained well organized and orderly and has largely worked its way out of the initial problems. Consequently, all phases of the industry now have expressed an interest in fine tuning production control systems so as to equate production to available markets for fluid and industrial milk. It is in this frame of reference that the Saskatchewan Department of Agriculture decided it would be useful to conduct a study of the industry to ensure that as much as possible is being done to assist with the continued adjustment, which must take place, in the production and marketing of milk.

The philosophy which EXP Consulting has applied to this study grows out of the foregoing historical setting. A number of alternatives have been outlined to mitigate problems referred to in the terms of reference. While a preferred alternative is proposed

in each case; those charged with responsibility for dealing with these recommendations are encouraged to note the emphasis which has been placed on the need for consultation with the industry, and particularly with producers, before any of the recommendations are acted upon. All segments of the industry appear ready to work together. Therefore, substantial consultation should improve the quality of the decisions which are finally implemented.

In all cases, for purposes of illustration, specific figures and percentages are given in the recommendations. It is important to remember, however, that, while they are the best figures which can be put forward at this time, these figures require refinement through discussions with the representatives of the industry. It is recognized that producers and processors must participate in establishing the specifics of policy which will affect their livelihood.

TERMS OF REFERENCE

Terms of reference for this study, which were established by the Saskatchewan Department of Agriculture, are:

1. To evaluate the structure, activities and operating procedures of the Saskatchewan Milk Control Board; consider alternative milk marketing structures and recommend a best option.

2. To evaluate the present procedures for reducing, increasing, and transferring quota; examine the alternatives available and recommend the best option.

3. To assess the province's current situation with respect to share of national quota and make recommendations.

4. To evaluate the validity and accuracy of the current procedures for determining the cost of production base and the subsequent pricing of milk and make recommendations.

5. To evaluate the present system of cream quotas and cream deliveries and make recommendations.

METHODOLOGY

Each of the activities, in the "Time Use Schedule" (Figure 1) covered all five items in the terms of reference.

Legislation, regulations, and details of organization of administrative services were collected from all provinces and the Canadian Dairy Commission.. Provincial comparisons were made respecting, legislative authority for (1) price and supply control, (2) the type of control agency, (3) method of quota determination, (4) method of quota transfer, (5) milk pricing, (6) the proportion of total M.S.Q. allocated to production of farm separated cream, (7) provisions for entry of new producers, and (8) provisions for maintenance of relationships between fluid quota and M.S.Q. A summary of findings is presented in Table 3.

Interviews to determine the views of the industry respecting items listed in the terms of reference were conducted with:

1. A random sample of 34 fluid producers.
2. A random sample of 5 cream producers taken from among those producing 500 kg or more per year.
3. Eight senior administrators.
4. Three processors and,
5. An additional group of ten producers selected because of their prominent role in the Saskatchewan dairy industry.

FIGURE 1: Time Use Schedule

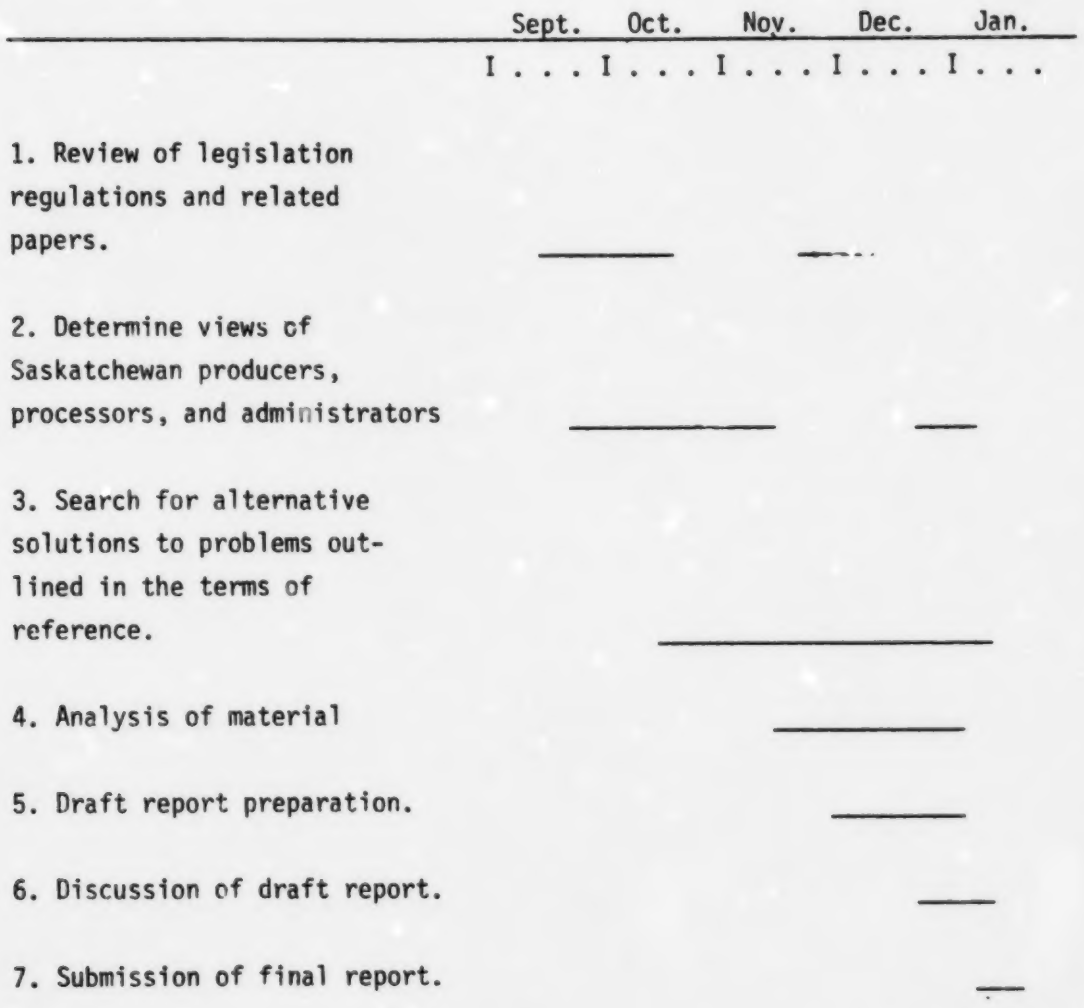
Sept.
Oct.
Nov.
Dec.
Jan.
1. Review of legislation regulations and related papers.
2. Determine views of Saskatchewan producers, processors, and administrators
3. Search for alternative solutions to problems outlined in the terms of reference.
4. Analysis of material
5. Draft report preparation.
6. Discussion of draft report.
7. Submission of final report.

TABLE 3

OUTLINE OF APPROACHES TO CONTROL OF PRODUCTION AND MARKETING OF MILK IN CERTAIN PROVINCES[1].

Province	Legislation		Type of Agency		Method of Quota Tansfer		Approx. Quota Price Nov., 1985	Cost of Production Determination			Cream M.S.Q. as a % of Total M.S.Q
	Specific to Milk	General Farm Products	Appointed	Elected by Producers	Regulation	Buy/Sell		Farm Survey	Index	Farm Survey & Index	
Saskatchewan	X		X		X		No recognized price.	X			16.0
New Brunswick		X	X			X	$200/litre			X	10.0
Quebec		X	X	X*		X	$355/litre				***
Ontario	X		X	X*		X	$285/litre			X	3.6
Manitoba		X	X	X*	X		No recognized price.	X			19.0
Alberta	X		X			X	$158/litre	**	X		8.5
British Columbia	X		X			X	$600/litre		X		***

1 Compiled from information assembled by the consultants.

* Authority for control of milk production and farm prices delegated to a producer board.

** Farm cost survey used occasionally to verify the index.

*** Less than one percent.

The consultative process with producers, administrators, and processors together with the written material assembled, enabled a definition of problems relating to the terms of reference, as seen by the industry. As well, a number of alternative solutions came to light during this phase of the study. These are presented in the discussion under each of the five terms of reference. Finally, a recommended course of action is suggested for each segment of the study.

The order of discussion of terms of reference is (1) the Milk Control Board, (2) quota policy, (3) cost of production determination, (4) present system of determining quotas for deliveries of farm separated cream and, (5) Saskatchewan's share of the national milk market.

PART II

MILK MARKETING CONTROL

a) Terms of Reference

Evaluate the structure, activity, and operating procedures of the Saskatchewan Milk Control Board; consider alternative milk marketing structures and recommend the best option.

b) Objectives of the Milk Control Board (M.C.B.)

Control of the production and marketing of milk is a very complex process. Certain objectives must be achieved in spite of a number of serious constraints.

Based on interviews with producers, processors, the M.C.B. and the representatives of the Government, the following list of objectives has been compiled:

1. Ensure the supply of milk equals the demand for milk.

2. Ensure adequate but not excessive returns to producers and processors.

3. Maintain the most efficient geographic relationship between milk production locations and milk processing locations.

4. Maintain both stability and flexibility in the production and processing phases of the industry.

5. Develop and administer regulations and programs to achieve objectives in a fair and equitable manner and operate programs which are seen by producers, processors, and consumers to be fair and equitable.

c) Constraints to the M.C.B. achieving its objectives

The objectives listed above must be achieved under a number of relatively serious constraints as follows:

1. Saskatchewan milk market consists of:
   a) The amount of milk which is consumed in fluid form, and
   b) The amount of M.S.Q. allocated to Saskatchewan under the National Milk Market Sharing agreement.

2. The consumption of milk in fluid form changes very little from year to year and, similarly, Saskatchewan's share of national M.S.Q. is unlikely to change significantly in the immediate future.

3. The two constraints listed above mean that (a) any increase in the fluid market for one processor results in a decrease for others; (b) any new plants constructed for either fluid or industrial processing must reduce processing at others and any decrease in processing in one plant will increase processing at others.

4. Since the milk industry is controlled from producer to retailer, the control process must remain accountable through the Government to the public.

It is necessary to keep these objectives and constraints in mind while examining the adequacy of the M.C.B. and its programs.

d) Powers and Composition of the M.C.B.

Milk marketing in Saskatchewan is controlled by the Saskatchewan M.C.B. operating under authority of the Milk Control Act.

The Act authorizes the Government to appoint the members of the board which shall consist of one or more persons. The Board is empowered to inquire into and make regulations or orders concerning the production, supply, distribution, and sale of milk. The Milk Control Act also authorizes the Board to cooperate with and enter into agreements with, the Government of Canada, the government of any province of Canada, or their agents, to regulate the production, processing, distribution and sale of milk within the province of Saskatchewan.

The Board is also authorized to act on behalf of the governments mentioned above to administer any of their programs pertaining to the marketing of milk in Saskatchewan. In addition, the Saskatchewan Milk Control Board may delegate to the Federal Government or any provincial government any of its powers.

The present M.C.B. consists of a chairman and four members appointed by the Government. The chairman is an agrologist, one member is a professor in the Microbiology and Food Science Department at the University of Saskatchewan, one is a graduate of the College of Home Economics, University of Saskatchewan, and two are dairy producers.

The Board has entered into agreement with the Canadian Dairy Commission under Section 8 of the Milk Control Act to administer Market Share quotas and collect levies on behalf of the Canadian Dairy Commission. The Board has also entered into agreement with the Dairy Producers Cooperative Limited (D.P.C.L.) under which the D.P.C.L. serves as the sole purchaser of milk and cream on its behalf. Most Saskatchewan raw milk is trucked by the D.P.C.L. under an arrangement with the Milk Control Board. Two additional trucking firms haul a small percentage of milk. Consequently, arrangements for delivery of milk required by other processors are usually made by D.P.C.L.

e) Producers and the M.C.B.

A random sample of producers was interviewed by the Consultants to determine their views. In general, producers said there was a need for a milk control agency. They recognize that if total production is to be managed so that it is roughly equal to total demand, there is no alternative to production quotas and price control.

Most producers were satisfied that they had good access to the M.C.B. and believe the Board is doing its best to regulate the industry fairly. However, based on producer interviews, the consultants found fairly consistent objection among producers to appointment by the Government of the producers on the Board. A majority of producers would prefer to elect their representatives to the Board.

Most producers complained about the lack of information available on quota allocations from the producer "waiting list" which is kept by the M.C.B. Those who had submitted their quota requirements, to the M.C.B. for entry onto the "waiting list" were concerned about not being advised as to how long it would be before they reached the top of the list and would receive the requested quota.

There is also an uneasiness among producers based on their lack of information and understanding about the way in which the M.C.B. administers the allocation of available quota.

f) Processors and the M.C.B.

The activities of the Board which impact most significantly on processors are:

1) Control of producer prices and retail prices (an indirect control over processing margins).

The producers appointed to the M.C.B. are also members and occasionally delegates of the Dairy Producers Cooperative Limited. This apparent indirect association or influence of one processor over the M.C.B., results in questions of potential bias being raised by the remaining two processors who do not have this indirect representation on the Board.

2) The M.C.B. policy of delegating the purchasing function exclusively to a single company.

The milk purchase function being delegated to one processor forces the other two processors to receive their milk from a competitor. While, in theory, all processors purchase their milk from the M.C.B., the fact that arrangements for delivery of requirements are actually made by a competitor is a source of concern.

3) The policy of establishing monopoly retail fluid milk markets in certain Milk Control Areas by Board Order.

One of the three processors does not have the advantage of a monopoly retail fluid milk market area since this processor has plants only in the competitive centres of Saskatoon and Regina. Monopoly market areas are established to provide assured market areas to support plant viability at Swift Current, Weyburn, Estevan, Yorkton, Melfort, Prince Albert, and North Battleford. The processor who is shut out of these

centres expressed concern at not being allowed to compete for the retail fluid market and of not being able to supply milk for the retail fluid market to outlets in control areas even though general supplier contracts have been made on a provincial or national basis.

4) The policy of maintaining control over the number and location of processing plants authorized to process milk.

Rigid control over the number and location of processing plants by the Department of Agriculture is not perceived by all processors to be a fair and unbiased process.

g) Milk Market Control In Other Provinces

The method of dealing with the most relevant features of milk production and marketing controls in other provinces is summarized in Table 3.

The following is a summary of the salient features of Table 3:

1. Legislation

The provinces of Saskatchewan, Ontario, Alberta, and B.C. provide legislative authority through an act specific to milk, while New Brunswick, Quebec and Manitoba have placed milk under their general farm products marketing act.

2. Type of Agency

The controlling authority is appointed in all provinces listed in Table 3 except Manitoba. However, Quebec and Ontario have elected producer boards which have been delegated authority over farm prices and supply control by the overall appointed authority.

3. Control of Quota Movement

Saskatchewan and Manitoba have attempted to regulate quota movement and maintain a "no quota value position". A buy/sell quota movement is utilized by New Brunswick, Quebec, Ontario, Alberta, and B.C. All of these provinces, except B.C., utilize a quota exchange operated by the milk control agency. B.C. allows the marketing of quota to be handled according to farmer preference. Marketing of quota through agents is common in B.C.

4. Quota Value

The price of quota varies from a high of $600/litre of daily quota in B.C. to $158/litre in Alberta with unknown values in Manitoba and Saskatchewan. In the latter two provinces, it may be assumed that farmers who are buying on-going dairy farms or complete dairy herds are including some amount in consideration of the quota that goes with the herd or with the herd and farm. It would be very difficult to estimate the value attached to quota under these circumstances.

5. Cost of Production Determination

Milk production costs at the farm level are determined in Manitoba and Saskatchewan by analysis of records on a sample of dairy farms. Alberta and B.C. utilize a composite index of relevant cost indicators while New Brunswick and Ontario utilize a farm survey as one of the factors in a composite index.

6. Percentage of M.S.Q. Taken up by Farm Separated Cream

Quebec and B.C. have very little farm separated cream production. Manitoba has the most (19%) and maintains 19% of M.S.Q. for cream production. Ontario utilizes 3.6% of M.S.Q. for cream production and has provision for M.S.Q. to move freely from fluid milk to the cream sector or vice versa. The percentage of M.S.Q. utilized for cream production is reported to be dropping steadily in New Brunswick and Alberta. The number of cream producers has been declining rapidly in Saskatchewan since 1972 (Table 7) and a similar trend applies to cream volume (Table 18).

h) Alternatives Considered for Saskatchewan

Management of production quotas and producer price determination are major M.C.B. functions. These are discussed in Parts III and IV respectively. Other important functions of the M.C.B. for which alternatives have been considered are:

- Legislative Authority.
- Composition of the M.C.B.
- Delegation of the Purchasing Function.
- Transportation from producer to processor.
- Establishment of control areas.
- Production Facility Classification related to milk price.

1. Legislative Authority

Two Saskatchewan Acts contain the authority required to perform milk marketing control functions. The Natural Product Marketing Act could provide adequately for an elected producer board to manage production quotas, producer pricing and raw product transportation to processing plants. However, while that act contains authorities for controls beyond the processing plant, it may not be appropriate to give a producer board the authority necessary for determining processor margins, management of Milk Control Areas for purposes of processing plant utilization, and to establish retail prices. It must be noted, however, the these "processing and beyond" control functions are essential to a satisfactory program in Saskatchewan.

All necessary control functions are presently being carried out by the M.C.B. under the Milk Control Act but this act is deficient in clarity respecting authority for production quotas and in obtaining producer input into matters of policy affecting milk pricing at producer level and management of quota allocation to producers. The Act also lacks clarity respecting methods of obtaining processor input into establishment of control areas, processing cost determination, processing margins, and milk purchasing and transportation.

The variety of ways in which both milk specific legislation and general farm products marketing legislation are utilized across Canada to provide authority for control of the production and marketing of milk (Table 3) demonstrates that there is no absolute by correct legislative course of action. Thus, the preferred approach would appear to be the simplest method of providing for an effective and efficient administration.

The Milk Control Act contains authority for all necessary controls and these controls can be administered by a single existing agency; the M.C.B.

After consideration of the legislative alternatives available, the consultants have concluded that there are several advantages to improving the Milk Control Act over utilizing the Natural Products Marketing Act or a combination of the two.

Recommendation #1

That the Milk Control Act continue as authority for the Milk Control Board and the required regulation of the production and marketing of milk.

2. Composition of the Milk Control Board

The M.C.B., has control functions over both producers and processors respecting product quantity and price. It would seem logical, therefore, that the M.C.B. should not be unduly influenced, when making decisions, by either producers or processors. If good decisions are to be made, however, a mechanism is required to provide input from both producers and processors. Producer input could be achieved through a separate producer advisory committee and processor input could be obtained from a processor advisory committee. This would leave the M.C.B. free of what might be perceived as conflict of interest among its members, but is would have a mechanism and a process through which to obtain information and opinions from both producers and processors.

At the present time, the M.C.B. does not have the benefit of a member or members who have expertise in analysis of the efficiencies or lack thereof being achieved by processors. One or more members with professional accounting training and experience are required for this purpose. While this expertise could be engaged by the Board to report on specific questions, the knowledge

and skills in judging the financial well being of processors would be absent during the Board's deliberation and decision making process. Thus, it appears that the business analysis functions of the Board would be strengthened significantly with the addition of one or two well qualified professional persons in the field of accounting and business management.

The potential for a conflict of interest developing on the Board is apparent respecting the determination of producer returns for milk and the retail price of milk. This is because an increase in producer price impacts on processor margins and retail price. Consumption rates, producer viability and processor viability can all be affected. This potential problem suggests the possibility of dropping producer representation from the Board and obtaining producer input, instead, by means of an elected producer advisory committee. This measure would also eliminate concern that one processor has indirect representation on the Board through the producer representatives who are also members of the D.P.C.L.

Recommendation #2

That the Milk Control Act be amended to:

2.1 Update the language.

2.2 Provide clear authority for supply control (Quota allocation).

2.3 Provide for an elected producer advisory committee.

2.4 Provide for a processor advisory committee.

2.5 Provide for an appointed Milk Control Board composed of persons selected from the professions of agrology, accounting, business administration, and home economics or food science.

3. Production Facility Classification Related to Milk Price

Milk production facilities on dairy farms are classified by the Saskatchewan Department of Agriculture[1]. Two classes of licences are issued. Class A licences are issued when the production practices and facilities are considered to be fully suitable for production of milk to be used for fluid retail sales. Class B licences are issued to fluid milk producers whose production practices and/or facilities are of a standard which may not result in fluid milk of a quality required by the regulations.

The MCB has adopted the policy of approving the Group I pool price for milk produced on farms with Class A licences (Table 4). However, there appears to be some confusion respecting producers with Class B licences since on December 15, 1985, there were only 30 fluid milk producers who did not qualify for the Group I pool price while there were 105 farms with B licences under Regulation 52/79 in January, 1986.

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[1] Regulation 52/79 under the Animal Products Act, Department of Agriculture.

The M.C.B. is attempting to utilize the class of licence issued to a producer as a measure of the quality of the milk which can be expected to be produced in these facilities on a consistent basis. This is the basis of the M.C.B. policy which enables those with Class "A" licences to qualify for the Group I pool price for the portion of their milk which is used for whole milk, U.H.T. milk, cottage cheese, or ice cream, and those with "B" licences to qualify only for the Group II pool price regardless of the products for which their milk is utilized.

TABLE 4

SASKATCHEWAN FARM PRICES PAID FOR MILK
BY USAGE GROUP, NOVEMBER, 1985

Milk Use Class[1]	Price $/100kg[1]	Pool	Blended Pool[2] Price, Nov '85
Whole Milk UHT Milk Cottage Cheese & Ice Cream	$51.50 $47.50 $38.49	Group 1	$46.38/100kg
Milk used for purposes such as butter, milk powder, cheese	$36.74	Group II	$37.30/100kg

[1] Source - Regulations Dec 13, 1984 under The Milk Control Act.
[2] Source - Saskatchewan Milk Control Board.

TABLE 5

SASKATCHEWAN PRODUCER MILK PRICES 1972 to 1985
(PRICE PER 100 KILOGRAMS)[1]

YEAR	CLASS I[2]	CLASS II	CLASS III
1972	$14.99/100 kgs	-	$ 6.61
1973	17.30	$10.25	9.37
1974	22.49	13.78	11.57
1975	25.79	18.87	15.21
1976	25.79	19.84	16.09
1977	27.45	19.84	16.09
1978	29.56	21.96	20.50
1979	34.37	24.71	23.26
1980	40.54	28.74	26.88
1981	44.85	32.10	30.35
1982	46.75	34.97	33.22
1983	46.75	35.59	33.84
1984	51.50	38.49	36.74
1985	51.50	39.49	37.74

[1] Source - Saskatchewan Milk Control Board.

[2] In some years there were several price changes, the above prices represent the highest price received by the producer during the year noted.

Regardless of the class of licence held by a milk producer, the milk produced will not be accepted for processing if it does not meet the fluid milk quality standards set out in Sections 15 and 16 of the regulations.

The above situation creates a policy issue. If the milk produced by the holders of Class "B" licences meets all the fluid milk quality standards as set out in Sections 15 and 16 of the regulation, and since it is mixed with the milk produced on farms with a Class "A' licence, why should producers with Class "B" licences not share in the top price pool? Conversely, why should milk produced on farms with Class "B" licences be mixed with milk produced on farms with Class "A" licences.

There are two obvious options:

1. To eliminate the price distinction between milk produced on farms holding Class "A" and Class "B" licences and instead to provide a specific time period for the farmers with Class "B" licences to upgrade to a Class "A" standard, with provision that milk produced in facilities which fail to meet Class "A" standards will not be accepted after the period for upgrading has lapsed, or

2. Lower the standard required for a Class "A" licence and place emphasis only on milk quality.

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[1] Milk Control Board records.

The problem with option 2 above is that, while samples are taken at the time of pick up on the farm, the milk is pumped into the truck tank before the sample is analyzed for quality. For this reason, it is necessary to ensure that the physical facilities available to the producer are of a sufficient standard to ensure that good milk can be produced with normal care and attention.

Recommendation #3

That regulation 52/79 under the Animal Products Act be amended as soon as possible to provide a specific time period for producers with a Class "B" licence to upgrade to Class "A" standards with provision that fluid milk will not be purchased from those who fail to meet the required standards within the period of grace provided in the regulations.

3.1 That M.C.B. regulations be amended to enable all producers with a Class "B" licence to share in the Group I pool price during the period of time allowed for upgrading to a Class "A" licence, providing, however, that the quality of milk produced continues to meet the quality standards required under Sections 15 and 16 of the regulations.

4. Delegation of Purchasing Function

A second problem is the Milk Control Board policy of delegating to a single processor the purchasing function for all milk.

A decision was made by the M.C.B. in 1974 to commence operation of a fluid milk pool to enable all fluid producers to share, equitably, the advantage of a higher price for milk consumed in fluid form and to also bear the burden of the lower price received for milk being utilized for industrial purposes.

To implement the pooling of returns for milk consumed in fluid form and milk used for industrial purposes, the M.C.B. arranged with one processor in the province to act as its agent for the purchase of all fluid milk.[1] This arrangement forced the remaining processors to order their milk requirements from a competitor.

One alternative would be for the M.C.B. to purchase milk. The M.C.B. could then require all processors to share surpluses according to their normal volume of usage. Additional computer equipment would be required by the M.C.B. or alternatively management of milk utilization records and calculation of producer returns from the fluid pool would have to be contracted to a third party.

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[1] Regulation under Milk Control Act, December 1974.

The foregoing alternative fails to provide for the long standing tradition of Saskatchewan dairy producers being able to designate milk for delivery to their own processing plant if they wish to do so. Since members of the D.P.C.L. would be denied this opportunity if the M.C.B. or a third party took over the purchasing function, the alternative of enabling milk producers to designate the purchaser has considerable merit.

The objective of providing producers with a choice of processor could be achieved by giving each producer the opportunity of designating the processor to whom he was selling. The trucker would issue a receipt for the appropriate number of kilograms of milk to be delivered to the designated processor. The M.C.B. would ensure that the amount of milk specified for delivery to a certain processor was, in fact, delivered to that processor. All processors would report milk utilization figures to the M.C.B. and the M.C.B. would make the Group I and Group II pool calculations and advise the processors of appropriate payment amount. Actual payment for milk would be made by each processor to his shippers. Processors would balance their requirements by purchasing milk from each other. This arrangement satisfies the objective of producers having a choice of processor and secondly of enabling the pooling of all Saskatchewan milk among all milk producers.

Recommendation #4

That the M.C.B. regulation delegating the purchasing of milk to a single agent be repealed and replaced with a provision enabling a dairy producer to direct that the amount of milk picked up on his farm be delivered to the processor of his choice except in milk control areas where only one plant is available.

4.1 That in milk control areas where only one plant is available, milk producers will be required to deliver to that plant unless the milk is directed to some other plant by the M.C.B. or unless the owner of the processing plant in question prefers to purchase his supplies from another processor.

5. Transportation of Milk from Producer to Processor

Trucking of milk from producer to processor is now done by four firms. The D.P.C.L. trucks most of the milk and arranges pick up schedules for the remaining three trucking firms. This arrangement presents the appearance of one processor having an excessively dominant role in determining milk transportation arrangements. While there may be significant efficiencies achieved in the present system, it does appear to depress competition.

An alternative to the present trucking arrangement should receive careful consideration. However, any alternative considered should meet the following criteria:

i) Allocate trucking routes on a competitive basis.

ii) Ensure that all milk in an area is picked up by a single trucking firm.

iii) Ensure that milk is delivered to the dairy producers choice of processing plant.

iv) The M.C.B. must have full information on amounts of milk delivered to each plant

The above criteria could be met if the M.C.B. was given full responsibility for contracting milk pick up and delivery on a competitive basis. Well defined trucking routes could be tendered on a route by route basis. All milk pick up on each route would be allocated to one trucking firm to maintain efficiency of service.

Each dairy farmer would designate the processor of his choice at the time of milk pick up. The driver would issue receipts to the farmer indicating the processor to whom milk is to be delivered. Since a single truck might carry milk for delivery to more than one processor, the M.C.B. would be required to direct the delivery of milk to ensure correct deliveries to each plant on a daily basis. Delivery of the proper amount of milk in total on a daily basis would be the key rather than trying to meter delivery off each truck to more than one plant. Under this arrangement, processors who were short of milk for their requirements could purchase from processors who were over their requirements.

Recommendation #5

That the M.C.B. administer the transportation of milk by tendering for trucking services on route basis.

5.1 That the M.C.B. devise a method of analyzing all tender submissions so that existing trucks are utilized on a least cost basis for the province.

5.2 That all trucking cost be calculated and a schedule of uniform trucking fees basis distance to the nearest processing plant, combined with volume per pick up, be compiled by the M.C.B.

6. The Need for Milk Control Areas

Milk Control Areas have been established and maintained by the M.C.B. to protect a fluid sales market for a processing plant where a monopoly on fluid sales is deemed by the M.C.B. to be essential to maintaining the viability of the processing plant. While this practice has been generally accepted in Saskatchewan, it remains a source of annoyance to the processors who cannot share in the fluid milk market even though they have trucks delivering industrial milk products, such as ice cream, cottage cheese and cheddar cheese, to these centres. The processors who are barred from fluid sales in a Control area also expressed concern at not having the opportunity of supplying merchandising chains in these centres when they have exclusive contracts with these specific merchandising chains.

The amount of processing taking place in the respective Milk Control Areas varies in volume and extent. It would appear, therefore, that the regulations providing for Milk Control Areas should specify minimum processing volume and complexity of processor mix. If a processing plant in a Control area dropped below the minimum standard (or specified level of processing) the protection of the Control area should be withdrawn and competition be allowed to take place in the retail fluid milk trade.

Recommendation #6

That minimum standards of processing volume and produce mix be established in the regulations and that Milk Control Areas be discontinued for an area when a processing plant in that area fails to measure up to the minimum standards.

7. Method of Obtaining Input from Producers and Processors

The potential for a conflict of interest among Milk Control Board members was discussed earlier in this section. It arises from representatives of producers and, in certain cases, indirect representation of processors participating in decisions on both producer and retail prices. The combination of producers and retail prices establishes the processing margins. Similarly, a conflict of interest could exist respecting trucking of milk to processing plants.

One alternative is to obtain producer and processor input through an advisory committee for each. The processor committee could be comprised of one representative from each processor. The producer advisory committee could be elected from among all dairy producers with elections conducted under the supervision of the Milk Control Board. A majority of producers prefer a process of electing representatives over having them appointed.

Recommendation #7

That no producers or processors be appointed to the Milk Control Board and that their input into policy be obtained through an elected producer advisory committee and a processor advisory committee.

7.1 That provision for producer and processor advisory committees be established in the regulations.

7.2 That the Milk Control Board be made responsible for conducting elections among producers to elect representatives to the producer advisory committee

7.3 That the processor advisory committee be composed of one representative appointed by each processor operating processing plants in Saskatchewan.

PART III

QUOTA POLICY

(a) Terms of Reference

Evaluate the present procedures for reducing, increasing, and transferring quota, examine the alternatives available and recommend the best option.

(b) The Industry's Assessment of the Problem

Based on interviews with producers, the consultants concluded that most producers hold the opinion that a body such as the M.C.B. should have final say on questions of quota increase, decrease and transfer. However, nearly all producers expressed the need for a more clearly defined and consistent policy of quota transfer.

Approximately 75% of producers would like to avoid quota value and would prefer to have regulations developed to control the movement of quota. This, they believe, will avoid putting quota on the market and thereby letting the demand for quota establish its value and effect quota allocation. This view is also generally supported by dairy program administrators but many were doubtful that this objective could be achieved.

However, while there is a basic desire in the dairy industry to avoid allowing quota to be transferred on a competitive market

basis, even this approach seemed to be preferred over the present "waiting list system".

The present "Waiting List" maintained by the M.C.B., for purposes of establishing priority for quota allotment, is not effective because the M.C.B. has very little free quota to allocate. At present, almost all quota moves directly from producer to producer with approval of the Milk Control Board under existing M.C.B. regulations.

Nearly all producers said they had little faith in the "waiting list system" and many expressed a mistrust of the system. Two-thirds of the dairy producers consider the present quota transfer system to be unsatisfactory.

(c) Quota Movement Policy in Other Provinces

Consultations were held with persons, who are involved in administration of the dairy industry in other provinces. These consultations were made in person or by telephone and, in some cases, by both personal contact and telephone. These out of province consultations were used to clarify various administrative requirements and procedures in the respective provinces and to obtain advice on some alternatives under consideration for Saskatchewan.

Movement of quota among dairy farmers is achieved in all provinces either by regulation or by trading at a market value or variations of these two approaches.

British Columbia is at one end of the spectrum where quota is bought and sold by dairy farmers and price is established by supply and demand with sales agents becoming involved in quota sales in many cases. The price of milk quota in B.C. is currently about $600 per litre of daily production quota.

Manitoba and Saskatchewan control quota movement among dairy farmers by regulation but neither province has enough quota to meet demand and so milk production quotas are assuming various levels of "under the table" value. "Under the table" values are achieved by inflating the price of cows and facilities to which the quota is attached. In Manitoba, twenty percent of quota held by a producer, who is selling only his herd (not the other farm facilities) to another farmer, must be surrendered to the milk marketing board when the quota transfer takes place.

Managed quota exchanges are operated in Quebec, Ontario, Alberta, New Brunswick, Nova Scotia, and Prince Edward Island. In these provinces, the place and process of the buying and selling of quota is managed by the provincial milk marketing authority. As well, most of these provinces provide for direct transfer of quota within family, and on an arms length farmer to farmer basis where

the entire facility is purchased. These direct quota transfers represent about 70% of the quota movement in provinces managing quota exchanges, leaving about 30% to be handled by the exchange. Some provinces have blended their M.S.Q. into total production quota and make an assessment of 15% - 25% of the quota going through the exchange while other provinces market M.S.Q. and Group I fluid Pool Quota separately through their quota exchange. In Ontario, the Milk Marketing Board claims 15% of the M.S.Q. which is being transferred but does not require return of any percentage of Group I fluid quota, while in New Brunswick 25% of M.S.Q. being transferred must be returned to the Board and 15% of Fluid Market Quota. In Nova Scotia, direct farmer to farmer transfer of quota is assessed at 25% but through the exchange, it is only 5%.

The present price of quota in Alberta is about $158 per litre of quota. Prices per litre in other provinces are roughly, Quebec $355, Ontario $285, N.B. $200, and B.C. $600 (Table 3).

(d) Alternatives Considered

The amount of milk quota in Saskatchewan is limited just as the amount of farm land is limited. For example, 208,018,088 kgs of fluid milk was produced in 1984 and, of this amount, 100,990,606 kg was sold for consumption in fluid form and about 107M kg was

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[1] 1984 Report of the Milk Control Board.

used for manufacture of milk products such as cheddar cheese, milk powder and butter. In addition, about 22.3M kg of milk equivalent was delivered in the form of farm separated cream.[1] The industrial portion (about 128M kgs) was nearly 3% over our national market share and over quota penalties render the over quota portion to be unprofitable. Thus, Saskatchewan dairy producers are limited to the 1984 level of production unless either total Canadian consumption of manufactured milk products increases or Saskatchewan consumption of retail fluid milk increases. It is evident, therefore, that the right to use quota must either be controlled by market forces (price) or by regulation. These are the two alternatives discussed in this section.

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[1] 1984 Report of the Milk Control Board

POLICY ALTERNATIVE I - Quota Control by Regulation

In the opinion of the consultants, a majority of producers, administrators, and even processors would prefer a quota administration system which would avoid having production quotas assume a market value. The purchase and sale of quota among dairy producers has resulted in values in other provinces as extreme as $600/litre/day. A quota of 500 litres per day is produced by a modest sized dairy herd of about 36 cows and at $600/litre would have a capital value of $300,000. This seems very high, particularly when the normal investment in the total physical production plant for a 36 cow operation might be less than this amount.

Quota values of this dimension substantially complicate the problem of financing a new dairy operation. The interest cost of quota alone for the 36 cows would run at about $30,000 annually or nearly $1000/cow/year.

In addition to the financial problems, which high quota values create for the new producer, consumers will become increasingly concerned about and suspicious of high quota values which may result from the buying and selling of quota among producers. While some provinces insist that the cost of quota is not included in the cost of production, interest costs of the order of $1000/cow cannot be overlooked or the producer is doomed to bankruptcy.

Thus, there appears to be substantial advantage in avoiding a system which allows the market to place a value on quota (the right to produce). However, this advantage fades rapidly if the alternative, control by regulation, fails to cause the industry to develop in a way that meets the objectives of a majority of producers in the industry.

The present system in Saskatchewan is a regulated system but the regulations are inadequate from the producer's point of view. At present, the Milk Control Board maintains a "first come first served" waiting list for quota. There are two problems with this system:

1. Under the present regulations, most of the freed up quota is reallocated automatically to another producer who is taking over the production unit which is dropping out.

2. Even if quota was available to the Milk Control Board for redistribution, the waiting list system does not permit an orderly and rational development of the industry. It fails to enable the Milk Control Board to deal with questions of priority respecting the need for new production units, the need for blocks of quota to move producers from a non-viable to a viable position and the need for an orderly movement toward enabling existing producers to make more efficient use of their facilities.

There are 4 basic concerns expressed by producers respecting development of the industry. These are:

1. Many Saskatchewan producers use the figure of 500 kg per day when talking about minimum size for viability. Based on this opinion, it is assumed, for purposes of illustrations, that every fluid milk producer should have the opportunity to achieve a minimum production level of 500 kg/day to achieve a viable scale of operation. There are presently 243 producers at a production level between 340 kg/day and 500 kg/day (Table 6).

2. Producers who are at a viable scale of operation (500 kg/day and over) should have an opportunity to take advantage of increasing cow production levels by being able to add quota gradually to fully utilize facilities. For example, a producer with a quota of 1000 kg/day, or about 65 cows, might be able to increase per cow production through improved breeding and feeding systems and eventually produce his 1000 kg/day with 60 cows leaving five unused spaces in his barn. It is the feeling of producers that a good quota allocation system would enable these producers to get enough quota over a period of a few years to once again fill their barn.

3. Most producers agree that a good quota distribution system will provide for a certain number of new producers to enter the industry each year. They appear to support the entry of

TABLE 6

SASKATCHEWAN FLUID MILK PRODUCERS TOTAL YEARLY PRODUCTION QUOTA ISSUED FOR THE 1985/86 DAIRY YEAR [1]

PRODUCTION RANGE IN KILOGRAMS[3]

YEARLY RANGE	DAILY AVERAGE RANGE[2]	NUMBER OF PRODUCERS
124,000 to 146,000	340 to 400	128
146,000 to 182,500	400 to 500	115
182,500 to 255,500	500 to 700	192
255,500 to 365,000	700 to 1,000	174
365,000 to 547,500	1,000 to 1,500	106
547,500 to 730,000	1,500 to 2,000	34
730,000 to 1,095,000	2,000 to 3,000	13
1,268,902	3,476	1
	TOTAL	763

[1] Saskatchewan's total yearly milk production quota is presently set at approximately 200,000,000 kilograms of milk.

[2] Producer enterprises holding a 1,000 or more kilograms of daily quota hold approximately 61,500,000 kilograms, or about 30.7% of the total.

[3] Source - Saskatchewan Milk Control Board.

new units at levels not less than 500 kg/day and not over 750 kg/day. In other words, a new producer should be entering the industry at a scale which is viable for a one family operation.

4. While the number of producers of farm separated cream has been decreasing steadily since 1972 at the average rate of 845/yr and a decline of 445 during the last year (Table 7), a majority of fluid milk producers believe that cream producers should have an opportunity to share in the distribution of available quota utilizing the same principles of distribution as for fluid milk producers. That is:

   a) Blocks of quota should be made available to bring all producers up to 500 kg of B.F./yr.

   b) Entry of new producers should be provided for but no entry at under 500 kg/yr.

   c) There should be an opportunity for gradual pro-rated increases for existing producers with quotas over 500 kg/yr.

With the foregoing producer points of view in mind, determination of the amount of quota which can be expected to be "freed up" each year becomes important. Perhaps the best indicator for the future is to look at what happened during the last available year of records.

TABLE 7

NUMBER OF ACTIVE MILK AND CREAM PRODUCERS IN SASKATCHEWAN BY DAIRY YEAR[1]

YEAR	CREAM	INDUSTRIAL	FLUID	TOTAL
1972/73	12,964	138	530	13,632
73/74	11,226	332	530	12,088
74/75	8,752	380	530	9,662
75/76	7,663	444	513	8,620
76/77	6,482	441	519	7,442
77/78	5,650	411	554	6,615
78/79	5,273	353	637	6,263
79/80	4,256	248	662	5,166
80/81	4,074	202	714	4,990
81/82	3,578	140	730	4,448
82/83	2,815	106	756	3,677
83/84	2,413	79	756	3,248
84/85	1,968[2]	56	781	2,805

[1] Source - Saskatchewan Milk Control Board.

[2] Average yearly shipment of butterfat was 361 kilograms per producer for the 1984/85 dairy year.

In Table 8, items (c), (d), (e) and (f) under the "Milk Sector" and Item (a) under "Cream Sector" represent the amount of quota which would have been available for allocation under a firm policy by the Milk Control Board. Items 1 and 2 under the "milk Sector" would logically be reallocated in equal amount to the new format of the same production unit.

The items listed above as available to the Milk Control Board in 1984/85 total:

Item	Number	Quota
Herds purchased to be moved	18	3,579,687 kgs/year
Total farms purchased	8	1,616,890 kgs/year
Partnerships	9	1,483,149 kgs/year
Discontinued shipping	7	1,036,746 kgs/year
Discontinued shipping cream	251	1,751,900 kgs/year
TOTAL		9,468,372 kgs/year milk equivalent 1754 cow equivalents at 5400 kgs/cow

Thus about 1750 cow equivalents would have been available to the Saskatchewan dairy industry in 1984-85 annually for adjustment in the composition of production units. The figure

TABLE 8

PROFILE OF SASKATCHEWAN'S QUOTA TRANSFER
MILK AND CREAM SECTOR - 1984/85[1]

MILK SECTOR	NUMBER	QUOTA TRANSFERRED	KG/DAY
a) Family transfer.	14	2,558,780 kgs of milk/yr	
b) Family partnership (family member joined the dairy).	5	no quota change.	7010
c) Herds purchased (to be moved one year later).	18	3,579,687	9807
d) Total farms purchased (ongoing dairy operation).	8	1,616,890	4430
e) Partnerships formed.	9	1,483,149[2]	4063
f) Discontinued shipping (quota recalled).	7	1,036,746	2840
CREAM SECTOR			
a) Discontinued shipping (quota recalled).	251	1,751,900 kgs of milk.	4800
Total		12,027,152	32950
Total (Available after family transfer)		9,468,372	25940

[1] Source - Saskatchewan Milk Control Board.

[2] quota transferred to the new location when the partnership was formed.

SASKATCHEWAN TOTAL QUOTA ALLOTMENT FOR 1984/85

Fluid - 106,040,000
Industrial Milk and Cream - 122,948,000 (based on 3.5% b.f. test)
Total Production 228,988,000 kgs.

of 1750 cow equivalents is therefore used as the most likely amount of quota which will be available for reallocation on an annual basis.

Since milk production quota is a scarce item, there will be tremendous pressure placed on the control agency by individuals who are attempting to gain advantage for themselves or for friends, relatives or constituents. Under these circumstances, the policy must be objective rather than subjective and must be isolated from the effect of pressure tactics. Specific regulations under the Milk Control Act by Order-in-Council establishing firm quota distribution policy will stand the best chance of satisfying the above criteria.

A long experience in administration of public policy has convinced the writer that specific policy established in regulations by Order-in-Council is less subject to political and other special interest pressure than is administration by boards, commissions or committees, even though they may have been delegated authority to make orders or regulations which have the effect of law. The most stable, constructive and effectively managed programs are those where a committee representing those affected by the policy, advises on basic policy objectives and where these objectives are expressed in specific regulations which can be administered by an agency but which cannot be changed or deviated from by that agency.

It must be noted again that these provisions of policy are essential only to those very important programs where program administration has great economic impact on individuals. Administration of quotas to produce milk is one of these high economic impact programs.

The recommendations which follow are, in the opinion of the consultants who conducted this study, consistent with the objectives expressed by Saskatchewan dairy producers during interviews. In presenting these recommendations, however, it is intended that these proposals be discussed with the producers to ensure that the policy objectives accommodate the long term goals of the industry.

Therefore, if this alternative is selected and if quota distribution is to be controlled by regulation, the following policy should be discussed with producers and the resulting policy detail be established in regulations. Producer input should be achieved continuously through an elected producer advisory committee to ensure that the regulations are amended when necessary and will continue to achieve the long term objections of the industry.

With the above points in mind, quota transfer policy alternative I has been designed to include the following features:

1. All quota should be returned to the M.C.B. when a change in the business organization of a producer occurs. Milk marketing quotas should not be marketable or traded.

2. In the case of family transfers, the amount of quota freed by outgoing family members should be allocated to incoming family members (category (a) Table 8).

3. There should be no surrender of quota when a family member joins the enterprise (category (b) Table 8).

4. Quota available for reallocation should be divided between enterprises that require expansion to achieve basic viability and viable enterprises that would be rendered more efficient by more quota and, as well, quota should be available to some new entries to the business.

5. Where the quota available is insufficient to meet the needs of any category (Table 9), the available quota should be allocated within the category by draw.

6. The details of the policy on milk quota control should be prescribed in regulations under the Milk Control Act by Order in Council so that the Milk Control Board can administer the policy on a strictly objective basis.

The results of a quota transfer policy observing the recommended principles set out above are illustrated in Table 9 and discussed in the following paragraphs.

TABLE 9

ILLUSTRATION OF A POTENTIAL QUOTA REALLOCATION UNDER THE PROPOSED POLICY

Priority for Transfer	Share of Available Quota Excluding Within Family Transfer				Distribution Policy	Method of Rationing	Estimated Number of Producers
	% of total	kg/yr	kg/day	Approx. Cow Equivalent			
1. Basic Viability Between 340-425 kg/day, Phase I 425-500 kg/day, Phase II	25	2,367,093	6,485	438	Blocks of quota as required to 425 kg/day	Draw	100
2. Efficiency of Facility Use.	48	4,544,818	12,452	842	Pro rated percent of existing quota.	N/A	300
3. New entry fluid.	15	1,420,255	3,891	263	30-50 cow units	Draw	7 or 8
4. Basic cream production level to 500 kg/yr.	4	378,735	1,038	70	Block of quota to 500 kg/yr.	Draw	500
5. Pro rated % increase for those over 500 kg/yr.	4	378,735	1,038	70	Pro rated percent of existing.	N/A	200
6. New entry for farm separated cream.	4	378,735	1,038	70	Block of 500 kg/yr.	Draw	26
TOTAL	100	9,468,371	25,942	1,753			

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In brief, and subject to further discussions with producers, it is recommended that available quota be distributed approximately as follows:

63% to existing fluid milk producers.

15% to permit new entries to the industry.

12% to cream producers.

The following detail is suggested for apportionment of available quota to assist in the development of the industry in accordance with producer objectives as expressed to the consultants. For purpose of illustration, it is assumed that the 9.465M kgs of quota available in 1984-85 would be available annually.

(i) Twenty-five percent of available quota, or about 438 cow equivalents, would be made available, first to increase basic viability of producers with quotas under 425 kgs/day to bring them to that level. If the available quota is insufficient to effect this to all producers who wish it, then the available quota would be allocated by draw.

Producers who were successful in the first draw would not be eligible for a second draw until all producers who wished to reach 425 kg/day had the opportunity to do so.

The process should then be repeated to give all producers with between 425 and 500 kgs of quota an opportunity to increase to 500 kg/day. It is estimated that this would be achieved within the third year of the policy (Table 9).

(ii) Forty-eight percent of the available quota, or about 842 cow units, would be made available to producers with quota between 500 and 1500 kgs/day but who require more quota to fully utilize existing facilities. They should have an opportunity to receive a pro rated percentage of their existing quota. Where available quota was insufficient to meet requests and needs, it would be allocated by draw.

(iii) Fifteen percent of available quota, or about 263 cow equivalents, should be reserved to provide for new qualified entrants to the industry, who meet specific criteria for experience, financial resources and location. New entrants should be granted quota of from 500 to 750 kg/day equivalent to 30 to 50 cows so that they would be a viable enterprise. As in (i) and (ii), a formal draw would be used where qualified applicants exceeded the quota available.

(iv) The minimum production level required for reasonable frequency of cream delivery in reasonable quantity is 500 kgs per year. Therefore, blocks of quota should be offered to cream producers with quotas below this level to bring them up to 500 kg/yr (Table 9).

Four percent of B.F. equivalent of available quota should be allocated to this priority (about 70 cow equivalents). All of those requesting this increase should have their names, together with the amount of quota required to bring them to 500 kg/yr, placed in a container and names should be drawn until the available quota has been allocated. This process should be repeated annually until all producers of farm separated cream have had an opportunity to increase to the 500 kg/yr level of quota. Those who do not wish a quota increase will have the opportunity to continue at their previous level.

(v) A further 4% in B.F. equivalent of available quota should be allocated to a pro-rated percentage increase in M.S.Q. according to the amount of quota available and producer interest in obtaining more quota. The maximum allowable M.S.Q. per production unit should be 5000 kg/yr.

(vi) The remaining 4% of available B.F. equivalent of available quota should be allocated to new entry of cream producers at the 500 kg/yr level. This will enable entry of about 26 producers annually at the 500 kg/yr level. If there are too many applications for the amount of quota available the quota should be allocated by drawing applications from a container until the available quota has been utilized (Table 9).

The figures for maximum levels in paragraphs (a) to (f) inclusive should be increased to 2800 kg/day for two family units and to 3600 kg/day for three or more family production units.

In every case where a draw system is used for quota allocation, those awarded quota by this process should not be eligible to enter another draw until all eligible producers who qualify for quota under this policy and who have requested quota have been allocated a quota entitlement under the policy.

Whenever the draw system is required as a means of determining who shall receive quota on a specific distribution, the draw should be conducted under the supervision of an impartial legal or accounting firm.

Distribution of available fluid quota should be conducted by the Milk Control Board on a quarterly basis.

Note that the precise percentage of available quota offered to various categories of producers are to be established by regulation under the Milk Control Act but should be discussed with and reviewed periodically with producers.

POLICY ALTERNATIVE II - The Quota Exchange, Market Value System

Introduction

Dairy farmers are accustomed to utilizing the market place to acquire supplies and sell produce. The farm community constantly relies on the market place to aid the decision making process. A market place where buyer and seller have equal knowledge, and are unable in any appreciable way to raise or depress the market price, can be a useful mechanism to allocate quota. Farmers perceive such a market place to be an impartial arbitrator and to have an integrity that no other allocated mechanism possesses. A quota market, or quota auctioning system, designed to meet the requirements and future needs of Saskatchewan milk producers must be considered as a policy alternative. Such a system may enable producers to individually adjust the quota requirements of their dairy enterprise to match their resources, management abilities and aspirations.

In 1979-80, three research groups[1] all assessed alternate quota distribution methods and the implications of quota

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[1] (a) "Quotas and Quota Values" - by the Main Supply Management Marketing Boards in Ontario.

(b) "Supply Management and Quota Values in Primary Agriculture" - Select Standing Committee on Agriculture in the Province of British Columbia.

(c) "Quotas" - Canadian Federation of Agriculture.

values. A common conclusion of the research reports was that the dangers, in terms of industry viability, of a rigid quota system with administered allocations, was greater from the producer's standpoint than from a freely negotiable system with quotas having price.

A suitable market mechanism to transfer quota should possess the following characteristics[1] -

a) have the confidence of producers and the industry in general,

b) provide the same opportunity to all eligible producers wanting to buy and sell quota,

c) reflect the value of quotas at all times,

d) operate independently and with a minimum of Board involvement,

e) eliminate third party involvement,

f) not be subject to exploitation or manipulation,

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1 Quota exchange Why? What? How? When? An Ontario Milk Marketing Board Information Brochure, 1980.

g) allow quotas to move to the most efficient milk producing areas,

h) be the most efficient system at the least possible cost.

There are three basic alternative mechanisms that have been used by various provinces in Canada: -

(1) Producer to producer transfers.
(2) Quota auctioning.
(3) Quota exchange.

Producer to producer transfers did not meet characteristics b, c, e, f, h, based on experience in Quebec, Ontario, and Saskatchewan. Quota Auctioning did not meet characteristics b, d, h, based on experience in Quebec. Quota exchange systems have been adopted by Quebec, Ontario, and New Brunswick and operate in similar fashion. Quebec, Ontario, and New Brunswick experience to date would seem to indicate this method provided the closest "fit" to the defined characteristics.

Quota Exchanges

The quota exchange is simply a means by which producers can buy and sell quota.

The following is an outline description of a quota exchange. Information presented is based on exchanges operated by the New Brunswick Milk Marketing Board[1], Federation de producteurs de lait du Quebec[2], and the Ontario Milk Marketing Board[3].

A producer who wishes to buy or sell milk quota must, in advance of a fixed date, transmit by telegram or letter a bid to buy or offer to sell as the case may be. The producer may in the same manner and period, cancel any bids or offers he may have made. The telegram or letter must mention such things as name of producer, his marketing licence number, address, category of quota[4] he wishes to buy if a bid to purchase, and the quota exchange month in which he wishes his bids to be included.

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1 "Board Order 1" of the New Brunswick Milk Marketing Board November 26, 1984.

2 'Gazette officielle du Quebec July 10, 1985 Decision 4135 June 18, 1985.

3 "Quota Exchange - Why ? What? How? When?" Ontario Milk Marketing Board Information Brochure, 1980.

4 Fluid (Pool 1), Industrial (or MSQ) Used or Unused.

A producer may not buy and sell, in the same month, milk quota of a similar category[1]. However, he may make several separate bids to buy or offers to sell (but not both) on the same exchange provided minimum specified transaction amounts are met.

At the time a particular Quota Exchange is to operate, the "Board"[2] would match the volumes and prices that have been submitted by Producers in the Offers to Sell and Bids to Buy. There will be a price [Market Clearing Price (MCP)] at which the volume of quota offered for sale will equal, or nearly equal the volume of quota bid for. The MCP as determined by clearing the Quota Exchange, is the price at which quota shall be deemed to have been sold or bought.

It is assumed in clearing the "Exchange" (Table 10) any producer offering to purchase quota at a price equal to, or higher than, the MCP, ($13.00 per kg B.F.) would be willing to pay the MCP. Similarly, it is assumed any producer wishing to sell quota at a price equal to, or lower than, the MCP will sell at the MCP.

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1 Fluid (Pool 1), Industrial (or MSQ) used and unused.

2 Respective Provincial Milk Marketing Agency.

TABLE 10 PRICE SETTING FOR INDUSTRIAL MILK QUOTA UNUSED[1]

	Offers to Purchase			Offers to Sell		
	A Amount by price kg B.F.	B Cummulative Amount (bottom to top) kg B.F.	C Price	D Cummulative Amount (top to bottom) kg B.F.	E Amount by price kg B.F.	F Difference B - D kg B.F.
1	10 000	200 000	$ 8.00	0	0 (+)	200 000
2	20 000	190 000	$ 9.00	20 000	20 000	170 000
3	20 000	170 000	$ 9.50	40 000	20 000	130 000
4	10 000	150 000	$10.00	60 000	20 000	90 000
5	15 000	140 000	$11.00	90 000	30 000	50 000
6	25 000	125 000	$12.00	95 000	5 000	30 000
7	5 000	100 000	$13.00	100 200	5 200	200
8	15 000	95 000	$14.00	102 000	1 800	- 7 000
9	20 000	80 000	$15.00	104 000	2 000	-24 000
10	20 000	60 000	$16.00	110 000	6 000	-50 000
11	10 000	40 000	$17.00	112 000	2 000	-72 000
12	15 000	30 000	$18.00	115 000	3 000	-85 000
13	5 000	15 000	$19.00	120 000	5 000	-105 000
14	(+) 10 000	10 000	$20.00	125 000	5 000	-115 000

QUANTITY PURCHASED

QUANTITY SOLD

(1) From "Système centralisé de vente de quotas" - le producteur de lait Québécois November 1985.

Upon clearing of the "Quota Exchange" the bids to buy and the offers to sell will not usually exactly match. The "Board"[1] may add to the "Exchange" (in Table 10 this would be 200 kg B.F.) to make an exact match. Alternatively, percentages of bids to buy and offers to sell may be calculated to make an exact match. In Table 8 100,000 kg B.F. would be purchased by producers at $13.00 per kg B.F., 200 kg B.F. by the "Board" and 100,200 sold by producers.

An "Exchange" would be operated and an MCP established for each quota category. The exchange may take place on a monthly or quarterly basis depending on volume and producers needs.

All producer participants in the "Quota Exchange" would be individually advised in writing whether their offer to sell or bid to buy was successful. The "Board" should notify all producers of the results of the exchange. A statement such as in Table 11 could be included in the milk settlement (cheque) statements.

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[1] Provincial Marketing Agency for Milk Operating the exchange.

ILLUSTRATION OF THE TYPE OF QUOTA EXCHANGE

INFORMATION TRANSMITTED TO PRODUCERS

Month*	Group I Pool Quota	Industrial/MSQ Unused	Industrial/MSQ Used
Market Clearing Price			
Kg B.F. purchased			
Kg B.F. bid for			
Kg B.F. sold			
KG B.F. offered for Sale			
Producers -			
buying quota			
wanting to buy quota			
selling cuota			
offering to sell quota			

* Insert appropriate month.

Policies Governing Quota Transfer

Under a "Quota Exchange", quota would be administered by, and be property of the MCB. The quota would be allotted to individual producers for that use.

Three main ways would exist for the producer to gain entry to the Saskatchewan market.

(1) Purchase of an on-going farm operation including quota.

(2) By transfer from an immediate family member[1].

(3) Acquisition of Quota through the quota exchange.

A producer, quitting or retiring from milk production would have the alternative of,

(1) transferring all or part of his quota to an immediate family member,

(2) selling all or part of his quota with his dairy farm as an "on-going" operation, or

(3) selling through the exchange.

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[1] Could include grandfather, grandmother, father, mother, husband, wife, son, son-in-law, daughter, daughter-in-law, brother, sister, grandson, grandson-in-law, granddaughter and granddaughter-in-law.

Quota Fund For New Entrants

In direct sales and sales of on-going farm operations other than within family transfers, a quota holdback or transfer assessment would be collected by the M.C.B. This fund would provide a quota reserve (or capital reserve should the quota be sold) by the MCB to be allocated to new entrants to dairying (and to balance the quota exchange). New entrants would be provided with a base quota amount from the quota fund or a capital amount from the capital fund to be utilized for time purchases of a base quota amount.

The base quota amount would be established by M.C.B. policy, and be refundable to the Board should the producer leave milk production within a specified time period.

Given an estimated annual rate of quota transfer (excluding family transfer) of 9.468 million kilograms of fluid including Fluid Equivalent of Farm Separated Cream or approximately 1754 cow equivalents, (see Table 8) a transfer assessment of 25% would provide 2.367 million kg of Fluid including Fluid Equivalent of Farm Separated Cream or approximately 438 cow equivalents.

Quota allotments returned to the board by producers failing to meet required quota maintenance levels would also add to the fund.

Within Family Transfers

Direct transfers of quota or quota transferred as a part of an on-going farm operation, to immediate family members would not be subject to transfer assessments. This would provide for a continuation of the family unit, at its existing level without disturbance.

Minimum and Maximum Quota Allotments

Maximum quota allotments to individuals, partnerships or corporate entities would be established by M.C.B. policy. The levels set would allow for efficiency of scale while at the same time maintaining an industry based on family farm units.(Table 12)

Minimum quota allotments to individuals, partnerships or corporate entities would be established by M.C.B. policy. The levels set would allow for efficiency of scale while at the same time maintaining an industry based on family farm units.

Minimum quota allotments should recognize the cost of the transport system and producer servicing.

TABLE 12

Maximum and Minimum Quota Allotments

	New Brunswick	Quebec	Ontario
Maximum			
Industrial	3000 litres/day		4400 litres/day
Combined[1]	3000 litres/day		5000 litres/day
Minimum			
Industrial	At Board	1600 kg/day	At Board
Combined[1]	Discretion	100 litres/day fluid	Discretion
		600 kg/day industrial	

[1] Fluid and Industrial

Regional Distribution of Production

The M.C.B. can equate milk supply to the demand for milk on a regional basis through allocation of production quotas to new producers in a region as required. This could be accomplished within the framework of a firm quota management policy.

Milk producers may be given the option of exchanging their Industrial (MSQ) quota for cream quota based on an equivalent for Industrial quota held as a milk producers.

Summary

A quota exchange is one method that can give the individual milk producer, and milk producers collectively through the M.C.B, freedom of choice and flexibility to manage their quota.

DAIRY PRODUCER RETIREMENT FUND

During interviews with administrators and dairy farmers on the question of quota management, the possibility of a dairy producers retirement fund was discussed. The possibility arose out of a search for a method of achieving the following objectives:

First, there is an urgent need for adjustment of the production base on many dairy farms. In many cases, the producer concerned appears to prefer the option of dropping his dairy enterprise over the option of increasing his commitment to it. Any incentive for the uncommitted producers to give up their quota now would increase the opportunity for adjustment among those remaining in the industry.

Secondly, it was also evident that some dairy producers who would like to drop their dairy enterprise, are reluctant to do so because they anticipate the possibility of their quota becoming a capital asset. Firm policy is urgently needed to clarify this issue.

Thirdly, there appears to be support for a program which would enable dairy producers to cooperate in managing a fund which would provide needed income upon retirement.

By paying a percentage of milk receipts into a fund, dairy producers have an opportunity to jointly accumulate sufficient pension funds to enable substantial earnings as a result of well managed investments. Upon retirement the accumulated amounts could be used to purchase an annuity.

While this would be a form of forced saving, it is not different from pension fund payments deducted from payroll by the majority of corporations and government. There is much to be said in favor of

farmers generally developing pension programs for themselves to take the pressure off the need for an immediate return on capital assets at the time of retirement.

Based on the interest shown by dairy producers, the concept of a dairy producer retirement fund is illustrated below.

Assumptions

a) Dairy producers will contribute one half of one percent of their receipts from milk production to a pension fund.

b) The pension fund will be administered by the M.C.B.

c) Contributions will be made to a maximum of 20 years.

d) To get the fund started, the M.C.B. will borrow funds which will be repaid out of contributions. (Interim financing might be through a Saskatchewan Government loan or loan guarantee).

e) To start the program, each producer will be credited with contributions equal to the lesser of 5 years or the number of years M.S.Q. has been held prior to commencement of the program.

f) During 1984-85, 12,027,152 kg of fluid quota and milk equivalent of cream quota was released for reallocation. The producers who previously held this quota are considered to have retired.

Based on (f) above; assume each producer was credited with five years, assume the average value of product was $.40/kg and assume the rate suggested in (a) above of .005 applied, the payout would be:

$.40 x 12,027,152 x .005 x 5 = $120,271.52

However, if this program resulted in an abnormal number of retirements, such as double the normal number, the payout could be $240,000 or more in the first year.

(g) If a Dairy Producers' retirement fund had been started at the beginning of the fiscal year 1984-85, at $.42/kg for 228,988,000 kg, payments into the fund at .005 would have amounted to:

$.42 x 228,988,000 x .005 = $480,874.80

In addition, the interest on this amount at 8% would amount to .08/2 x $480,874.80 = $19,234.99

A hypothetical program is illustrated in Table 13.

TABLE 13

ILLUSTRATION OF PROPOSED RETIREMENT PROGRAM FUND ACCUMULATION

Level of Quality Production	Contribution at .005[1] of Receipts		Fund Accumulation Interest Compounded Annually @ 8%			
	Daily	Annually	5 yrs	10 yrs	15 yrs	20 yrs
500 kg	1.35	492.75	$2,893	$ 7,143	$13,392	$22,571
1000 kg	2.70	985.50	$5,786	$14,286	$26,784	$45,568
1500 kg	4.05	1478.25	$8,679	$21,429	$40,176	$67,713

[1] If the rate of contribution was increased to .01 the fund accumulation would be doubled.

Recommendation #8

That milk production quota transfer between producers be controlled by firm policy established in regulations under the Milk Control Act by Order-in-Council as set out in Alternative I.

8.1 That the Producer Advisory Committee (see Recommendation 2.3) be asked by the Milk Control Board to establish firm long term industry objectives respecting viability and efficiency of dairy farms.

8.2 That the long term objectives of the industry be reflected in clear and firm regulations which can be administered by decisions based on objective data rather than subjective information.

8.3 That the producers advisory committee be advised of all quota allocations by the Milk Control Board immediately after the quota allocations have been made each quarter.

8.4 That the producers advisory committee be given responsibility for ensuring that the quota transfer regulations continue to be achieving industry objectives.

8.5 That the previously maintained "Waiting List" for quota be discontinued and replaced by the firm policy on quota movement and that all producers be immediately advised that the "Waiting List" is no longer being maintained or used.

Recommendation #9

That the Milk Control Board establish and manage a dairy producers retirement fund if requested to do so by the producers advisory committee.

9.1 That the rate of contribution, maximum period of contributions and other details be based on producer recommendations.

9.2 That the Government of Saskatchewan either lend pension program start up funds to the Milk Control Board or guarantee a loan made elsewhere on behalf of the pension program.

9.3 That all present quota holders be immediately credited with the lesser of five years of contributions or the period during which the quota has been held.

9.4 That producers who retire in future receive payment on the basis of the number of years of actual payments into the fund plus the number of years credited at commencement of the program to a maximum of twenty years.

PART IV

COST OF PRODUCTION - MILK PRICING PROCEDURES

(a) Terms of Reference

To evaluate the validity and accuracy of the current procedures for determining producer cost of production, and subsequent milk pricing, to discuss alternatives, and to recommend a best option.

(b) The Saskatchewan Situation

Cost of production information for Saskatchewan fluid milk production has been determined since 1980 using an annual Saskatchewan Dairy Study conducted by Saskatchewan Agriculture. Key input data to the Study is updated quarterly. The cost of production figures are used by the Milk Control Board as a guide in pricing fluid milk in Saskatchewan.

In conducting the Study, Saskatchewan Agriculture selects approximately 50 herds according to geographic area, age, size of the production unit and the level of milk production. These 50 herds represent 5% - 6% of fluid milk producers in Saskatchewan. Financial support to conduct the 1984 Study and an outline of the costs are shown below.

Revenue

Sask. Milk Producers Assoc.	$35,000.00
Sask. Agriculture	30,000.00
Canadian Dairy Commission	15,000.00
TOTAL	$80,000.00

Expenses

Study Coordinator (Part Time)	$18,000.00
Technicians (Part Time) time. travel, and sustenance	41,000.00
Canfarm fees	20,000.00
TOTAL	$79,000.00

(c) A Critical Review

The Sask. Dairy Study has been operating since 1980. Prior to this, there was not a formal procedure to determine fluid milk production costs, and the present system was viewed as a major step forward. Industry acceptance of the methods employed and of the resulting cost of production figures has been generally good. However, areas of concern have been expressed through the industry interviews.

1) There is a considerable delay after the quarterly date before cost of production figures are available to the Milk Control Board. The time required for data collection on 50 farms and then for

analysis, dictates that there be some delay. Thus, there was producer concern that they were always in a catch-up position in respect to price increases reflecting a rise in costs of production.

2) The present system involves considerable travel and time; thus, it is costly. Visiting 50 herd owners, four times per year, using part time staff, leads to delays in data collection and inaccuracies. Sask. Agriculture has indicated their time is limited for these kinds of studies and this restraint is likely to increase in the future. The Canadian Dairy Commission has supported the Study in the past but has indicated that the format for the Saskatchewan study will need to change for their continued support. The present system of determining cost of production appears due for a change and it is important that this be planned and the industry prepared for the change.

3) The producer cost of production figure used by the Milk Control Board is only one of several considerations weighed by the Board when determining if a price increase is to be affected. The decision making process is subjective rather than objective with the Board being exposed to numerous pressures from inside and outside the dairy industry. The pricing process by its very nature often leads to considerable media attention and debate; thereby placing more pressure on the Board.

(d) Procedures in Other Provinces

Across Canada, nearly all provinces use an accounting type system to some degree to determine costs of production for dairymen. This information may then be used as evidence in negotiating a price for milk. More often it is used as the basis for calculation or verification of a system using indices to determine price. Some provinces use a cost of production study in combination with indices. British Columbia employs indices reflecting the economy on both the consumer and producer sides. Alberta uses an accounting system in tandem to a totally indexed system. The accounting system acts as a check on the validity of a composite index reflecting cost of production. Ontario uses a two part formula with a cost of production base and an indexing system with formula values. In most provinces, there is a higher authority to authorize a change in fluid milk price when a change is indicated by the system used to determine cost of production.

(e) Alternatives for Saskatchewan

The present system in Saskatchewan for determining the cost of milk production is widely accepted by producers. However, concerns by the industry were noted and may be summarized as follows:

a) The Dairy Study is difficult to compile quickly and accurately.

b) It is expensive to gather the information.

c) The Board decision on a fluid milk price change is a subjective rather than an objective process.

A composite index of the most relevant cost indicators similar to the composite index used in Alberta, is one alternative to the slow and expensive accounting method now in use in Saskatchewan. British Columbia has successfully utilized a fully indexed system since 1956 to the extent that this is the only cost indicator used.

By way of caution, however, quota values are nearly twice as high in B.C. as in the second high province of Quebec. This might suggest that the B.C. cost of production index has resulted in an excessively profitable milk price and that more "fine tuning" of the index should have been done.

Utilizing only a system of indices to determine cost of production changes would overcome the problems of the present system. It could be calculated monthly from readily available information at little or no cost. As well, the price changes would occur automatically in a well understood and consistent manner by the use of a trigger mechanism expressed in regulations under the Milk Control Act.

Initially, the present accounting method could be used as a check against a new composite index system. This would allow a

regular check on the new system as well as providing an opportunity for the industry to become familiar with the new method. As soon as possible and preferably within one year, total reliance could be placed on the indexing formula. Periodic checks and even changes to the formula may be required but these would be instituted only as the industry deemed necessary.

Using Saskatchewan figures, an example of a formula which may be used to indicate cost of production changes is shown in Table 15. These factors are the same as those used in Alberta (Table 17) and, with one exception, in British Columbia.

Using the index items outlined in Table 14, the indices shown in Table 15 were calculated as follows:

$$\frac{\text{Actual Monthly Figure}}{\text{Actual January 1982 Figure}} \times 100 = \text{Monthly Factor Index}$$

Composite Index - The sum when each Monthly Factor Index is multiplied by its weighting figure.

Computed Price - The M.C.B. price of Class I milk on January 1, 1982 multiplied by the Composite Index.

Index Triggered Class I Price — Changes are triggered in 98¢ intervals. A change is triggered when the Computed Price deviates + or - from Actual Price by 49¢.

Class 1 Price - The M.C.B. price paid to producers for Class 1 fluid milk.

Base Period - January 1982 (Saskatchewan) has been used in this example but British Columbia uses a 10 year rolling monthly average. It is recommended that a 5 year rolling monthly average be considered.

TABLE 14

EXPLANATION OF FLUID MILK PRICE FORMULAS

USED IN TABLE 12

Index Item	Weighting
1. Consumer Price Index - the most recent published Statistics Canada index for Saskatoon.	.10
2. Average Weekly Industrial Wages Rate - most recent published Statistics Canada figure for Saskatchewan.	.16
3. Saskatchewan Milk Consumption - the most recent quarterly figure from the Milk Control Board.	.14
4. Western Canada Farm Input Price Index - the most recent published Statistics Canada figure for Western Canada.	.20
5. Western Canada Farm Wage Index - the most recent published Statistics Canada figure for Western Canada.	.12
6. Saskatchewan Alfalfa Hay Price - most recent figure from Saskatchewan Agriculture.	.14
7. Saskatchewan 16% Dairy Feed Price - the average of most recent prices from three major feed manufacturers in Saskatchewan.	.14

TABLE 15

EXAMPLE OF A POTENTIAL BASIS FOR A COMPOSITE COST OF PRODUCTION INDEX[1]

		SASKATOON CONSUMER PRICE INDEX	SASKATCHEWAN INDUSTRIAL WAGE RATE	SASKATCHEWAN MILK CONSUMPTION	W. CANADA FARM INPUT PRICE INDEX	W. CANADA HIRED FARM LABOR	SASKATCHEWAN HAY PRICE	SASKATCHEWAN DAIRY FEED PRICE	COMPOSITE INDEX	COMPUTED PRICE	INDEX TRIGGERED CLASS I PRICE	M.C.B. CLASS 1 PRICE BASIS FARM COST STUDY
WEIGHTING		0.10	0.16	0.14	0.20	0.12	0.14	0.14	100.00	$/hl	$/hl	$/hl
Month	Year											
JANUARY	1982	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	44.85	44.85	44.85
FEBRUARY	1982	101.33	102.61	95.81	100.00	100.00	108.88	100.00	101.21	45.39	45.83	44.85
MARCH	1982	102.57	103.67	110.53	100.00	100.00	110.40	100.00	103.77	46.54	46.81	44.85
APRIL	1982	102.85	107.64	102.43	104.57	101.24	101.93	100.64	103.27	46.32	45.83	44.85
MAY	1982	102.85	104.88	98.57	104.57	101.24	109.22	100.64	103.31	46.33	46.81	44.85
JUNE	1982	103.52	106.20	99.05	104.57	102.24	106.67	100.64	103.30	46.33	46.81	44.85
JULY	1982	104.00	107.84	99.00	103.87	102.39	98.71	103.97	102.95	46.17	45.83	44.85
AUGUST	1982	104.38	109.61	99.15	103.87	102.39	97.50	103.97	103.12	46.25	45.83	44.85
SEPTEMBER	1982	104.47	108.04	103.78	103.87	102.39	91.96	103.97	102.75	46.08	45.83	44.85
OCTOBER	1982	105.99	110.34	105.25	102.28	102.77	94.82	98.28	102.81	46.11	45.83	46.75
NOVEMBER	1982	105.90	109.99	107.79	102.28	102.77	96.36	98.28	103.32	46.34	46.81	46.75
DECEMBER	1982	106.18	108.87	106.07	102.28	102.77	92.41	98.28	102.37	45.91	45.83	46.75
JANUARY	1983	106.76	109.71	101.59	102.68	103.73	92.44	96.24	101.85	45.68	45.83	46.75
FEBRUARY	1983	107.33	109.83	96.51	102.68	103.73	92.15	96.24	101.17	45.38	45.83	46.75
MARCH	1983	107.99	111.19	114.68	102.68	103.73	88.76	96.24	103.53	46.43	46.81	46.75
APRIL	1983	108.75	111.47	96.31	103.18	105.16	90.20	98.93	101.93	45.71	45.83	46.75
MAY	1983	109.90	112.44	103.83	103.18	105.16	90.67	98.93	103.32	46.34	46.81	46.75
JUNE	1983	110.28	114.93	102.85	103.18	105.16	84.73	98.93	102.78	46.10	45.83	46.75
JULY	1983	111.42	116.62	92.17	103.08	105.83	90.45	101.61	102.91	46.15	45.83	46.75
AUGUST	1983	111.99	117.44	102.48	103.08	105.83	93.33	101.61	104.94	47.07	46.81	46.75
SEPTEMBER	1983	111.70	117.80	112.04	103.08	105.83	91.49	101.61	106.05	47.57	47.79	46.75
OCTOBER	1983	112.46	117.71	105.34	102.48	106.41	92.63	109.12	106.34	47.69	47.79	46.75
NOVEMBER	1983	112.27	116.92	104.51	102.48	106.41	90.90	109.12	105.83	47.47	47.79	48.65
DECEMBER	1983	112.18	115.58	108.42	102.48	106.41	98.55	109.12	107.23	48.09	47.79	48.65
JANUARY	1984	112.75	117.52	106.34	105.56	107.84	92.44	108.80	107.19	48.08	47.79	48.65
FEBRUARY	1984	113.13	116.40	96.75	105.56	107.84	92.15	108.80	105.67	47.39	47.79	48.65
MARCH	1984	113.23	116.84	110.74	105.56	107.84	88.76	108.80	107.23	48.09	47.79	48.65
APRIL	1984	113.61	118.37	98.12	105.46	109.46	90.20	106.44	105.79	47.45	47.79	48.65
MAY	1984	113.99	119.66	106.92	105.46	109.46	90.67	106.44	107.34	48.14	47.79	48.65
JUNE	1984	114.56	120.71	100.95	105.46	109.46	84.73	106.44	105.89	47.49	47.79	48.65
JULY	1984	114.08	122.22	95.82	106.06	110.42	90.45	106.87	106.47	47.75	47.79	48.65
AUGUST	1984	114.18	122.87	105.10	106.06	110.42	93.33	106.87	108.28	48.56	48.77	51.50
SEPTEMBER	1984	114.84	121.79	103.20	106.06	110.42	91.49	106.87	107.65	48.28	48.77	51.50
OCTOBER	1984	114.75	121.32	110.88	106.45	110.90	92.63	104.61	108.62	48.72	48.77	51.50
NOVEMBER	1984	115.51	122.63	111.28	106.45	110.90	90.90	104.61	108.72	48.76	48.77	51.50
DECEMBER	1984	115.70	123.01	100.89	106.45	110.90	98.55	104.61	108.42	48.63	48.77	51.50
JANUARY	1985	115.98	122.58	106.49	107.45	111.47	96.16	104.29	109.05	48.91	48.77	51.50
FEBRUARY	1985	116.46	121.46	99.75	107.45	111.47	95.50	104.29	107.88	48.39	48.77	51.50
MARCH	1985	114.84	122.45	105.39	107.45	111.47	92.99	104.29	108.52	48.67	48.77	51.50
APRIL	1985	117.41	123.82	103.71	108.34	113.38	93.37	101.93	108.69	48.75	48.77	51.50
MAY	1985	117.51	124.55	106.74	108.34	113.38	95.82	101.93	109.58	49.15	48.77	51.50
JUNE	1985	117.98	126.06	94.17	108.34	113.38	97.67	101.93	108.37	48.60	48.77	51.50

0442IN

[1] Prepared on basis of existing data.

TABLE 16

COST OF PRODUCTION BY QUARTER[1]
SASKATCHEWAN MILK PRICING, 1982 - 1985

	Group I Pool[2] at 3.5	Formula Price	%
1982			
1st quarter	39.614	43.59	90.87
2nd quarter	39.611	43.00	92.12
3rd quarter	39.883	42.00	94.96
4th quarter	41.872	43.49	96.28
1983			
1st quarter	41.759	44.89	93.03
2nd quarter	41.357	44.30	93.36
3rd quarter	41.635	44.78	92.98
4th quarter	42.937	44.48	96.53
1984			
1st quarter	43.234	44.57	96.99
2nd quarter	43.211	45.52	92.88
3rd quarter	44.219	47.61	92.88
4th quarter	45.322	45.46	99.70
1985			
1st quarter	45.062	46.74	96.41
2nd quarter	45.162	49.59	91.07

[1] The above quarterly prices are calculated three to four months after the quarter is completed. For instance, the second quarter results for 1985 were made available to the Board in the first part of October, 1985.

[2] Average for Group I Pool includes subsidy less levy using average fluid factors and exclusion factor.

TABLE 17

ALBERTA FLUID MILK PRICE FORMULA CALCULATIONS[1]

month	CANADA CONSUMER PRICE index	ALTA INDUSTRIAL WAGES $/week	ALTA MILK CONSUM. l/month	WEST C. FARM INPUT index	WEST C. FARM WAGE index	ALTA HAY PRICE $/ton	ALTA DAIRY FEED $/tonne	COMPOSITE INDEX	COMPUTED PRICE $/hl	ACTUAL PRICE $/hl
weight	10	16	14	20	12	14	14	100		
August/1973	48.40	149.42	8.01	39.17	44.89	31.90	100.17	100	21.04	
January 1985	124.00	443.04	9.00	107.60	115.40	71.74	191.17	232.78	48.98	49.11
February	124.00	438.51	9.00	107.60	115.40	76.13	194.00	234.62	49.36	49.11
March	124.60	440.20	8.99	108.00	115.50	79.47	197.10	237.04	49.87	50.09
April	125.40	440.08	8.99	108.00	115.50	79.47	198.50	237.39	49.95	50.09
May	125.70	435.33	8.99	108.00	115.50	82.80	198.08	238.34	50.15	50.09
June	126.20	444.05	8.98	108.10	116.10	82.80	197.33	239.47	50.38	50.09
July	126.50	443.43	8.98	108.10	116.10	82.80	197.05	239.42	50.37	50.09
August	127.20	441.56	8.98	108.10	116.10	84.37	195.43	239.83	50.46	50.09
September	127.60	441.84	9.00	109.10	117.80	85.93	195.72	241.67	50.85	51.07
October	127.80	442.22	9.00	109.10	117.80	86.92	194.29	241.99	50.91	51.07
November	128.00	443.31	9.04	109.10	117.80	86.92	189.92	241.60	50.83	51.07
Relative importance of indices on price change (%):	5.	10.	4.			28.	52.			
Next change is due after (¢):									73	

Monthly indices are divided by august/73 base and multiplied by the weight. The sum of indices results in "composite index". Composite index multiplied by august/73 price results in "computed price".
The "actual price" changes in $0.98 intervals. Change is triggered when computed price deviates from actual price by 49 cents or more.

ALBERTA AGRICULTURE
Rudy Busko (403) 427-5397

[1] Table provided by the Alberta Department of Agriculture.

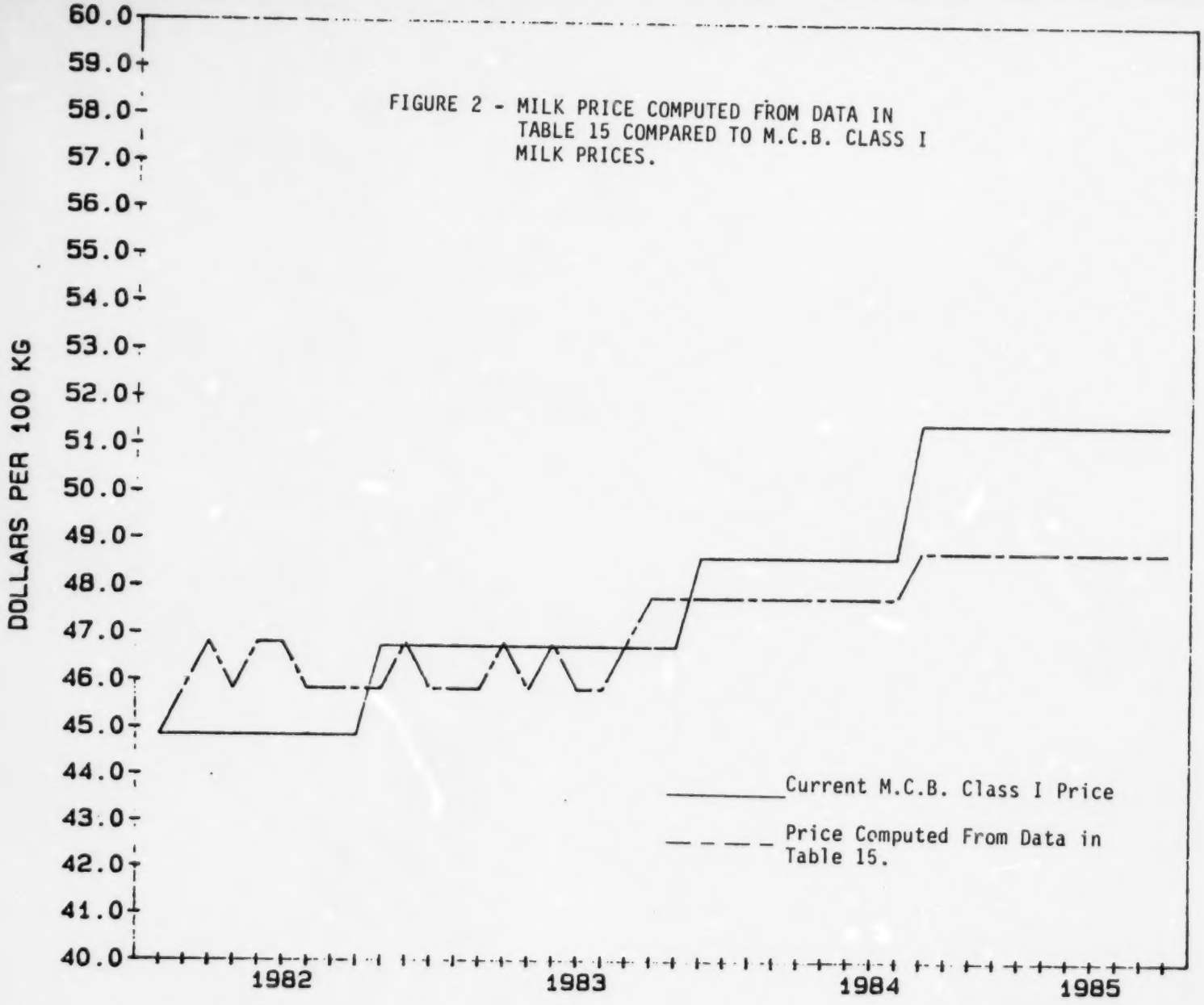

FIGURE 2 - MILK PRICE COMPUTED FROM DATA IN TABLE 15 COMPARED TO M.C.B. CLASS I MILK PRICES.

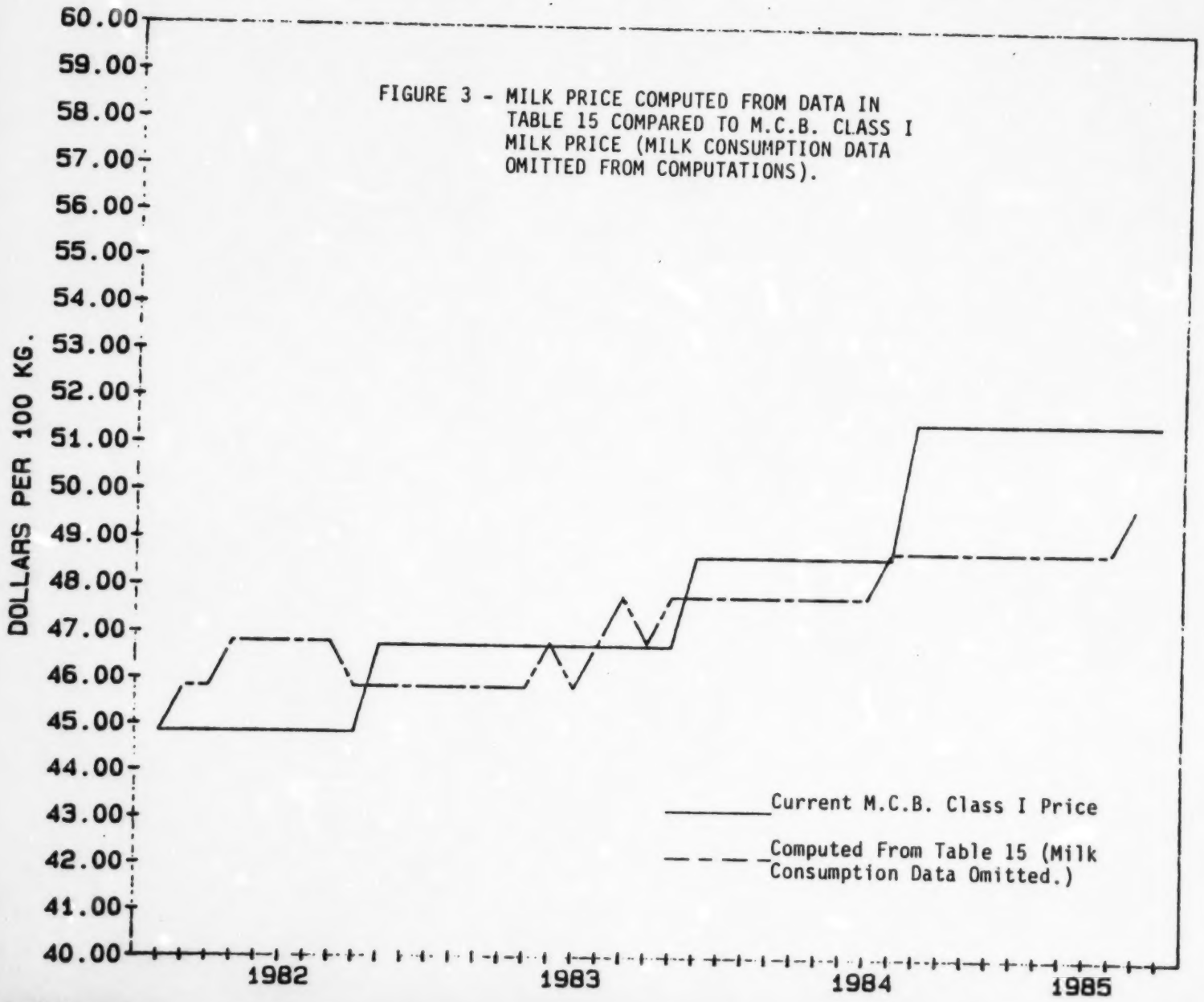

FIGURE 3 - MILK PRICE COMPUTED FROM DATA IN TABLE 15 COMPARED TO M.C.B. CLASS I MILK PRICE (MILK CONSUMPTION DATA OMITTED FROM COMPUTATIONS).

The indices on Table 15 were then plotted against actual prices since 1982 (Table 16). The result is shown on Figure 2.

An automatic trigger for price change should be built into a composite index as it is in Alberta and B.C. The interval of 98¢ (Alberta) is used in this example but 90¢ (B.C.) could be considered. The purpose of the interval is to modify the frequency of price changes.

Figure 2 plots the present Class I price and the price which would result from the trial composit index for the period of January 1982 to June 1985. It indicates sufficient agreement between the two systems to suggest further work on a composite index would be worthwhile. The purpose of this example, however, is to present a concept and the actual fine tuning of the system should be left to people qualified to develop a reliable composite index.

One obvious problem with the sample data is that the milk consumption index relects consumption changes based on the number of days in the month. For example, February consistently shows lower consumption than January and March. Alberta has resolved this problem by using an average of the previous quarter for the consumption figures for the next quarter. Thus, their milk consumption index has less influence on price than the sample data used in Table 15.

To test the influence of the variable milk consumption figures, the composite index was calculated leaving out the milk consumption data and distributing the milk consumption weighing factors evenly among the other indices. The result is shown in Figure 3. It appears that the extremely variable feed prices caused by drought and falling grain prices continue to cause fairly erratic price results. While Figure 3 may suggest appropriate price changes, the frequency of increases and decreases may be greater than is practical in the market place. However, in spite of the concerns discussed above, the potential savings in the cost of computing price from a composite index compared to the more laborious analysis of a sample of 50 farms, together with the more timely calculations possible from a composite index strongly suggest that a reliable composite index system should be developed.

It may be possible to improve on the alfalfa price indicator used (see Table 14 item 6) and the dairy feed index (Table 14 item 7) may not be the best available. Figures for these items in Table 15 show considerable variability.

Recommendation #10

That the process of establishing cost of production be simplified and speeded up by utilizing a composit index of reliable cost indicators which are available monthly.

10.1 That the Milk Control Board be made responsible for calculating a producer formula price based on the index.

10.2 That a producer price change triggering mechanism be established in regulations under the Milk Control Act.

10.3 That the Milk Control Board be responsible for referring the producer price formula data and formula price results to the producer advisory committee for review on a monthly basis.

PART V

QUOTA FOR FARM SEPARATED CREAM AS RELATED TO FLUID MILK QUOTAS

(a) Terms of Reference

Evaluate the present system of cream quotas and cream deliveries and make recommendations.

(b) The Saskatchewan Situation

The number of cream producers decreased from nearly 13,000 in 1972 when Saskatchewan entered the National Milk Market Sharing program to just under 2,000 in 1984/85. During this period, cream production dropped from 4.579M kg to .72M kg. The drop in production was nearly one million kg per year for the first two years as production of industrial fluid milk increased (Table 18). In recent years, the annual decrease in farm separated cream production has been about 100,000 kg per year.

Industrial fluid milk producers increased in number from 1972 to 1977 and then decreased steadily as the program of pooling fluid production for the retail trade and industrial purposed developed.

TABLE 18

MARKET SHARE QUOTA UTILIZATION BY PRODUCER TYPE - 1972 to 1985[1]
(000 KILOGRAMS OF BUTTERFAT)

DAIRY YEAR	CREAM SHIPPED	INDUSTRIAL MILK	FLUID M.S.Q. (000)	TOTAL
1972/73	4,579	317	304	5,100
73/74	3,596	304	600	4,500
74/75	2,447	210	943	3,600
75/76	2,061	1,264	575	3,900
76/77	1,854	1,429	317	3,600
77/78	1,679	1,496	625	3,800
78/79	1,461	1,336	854	3,650
79/80	1,329	993	1,226	3,549
80/81	1,260	815	1,968	4,043
81/82	1,055	612	2,616	4,283
82/83	908	412	3,046	4,366
83/84	822	361	3,396	4,580
84/85	720	_____	3,740[2]	4,460

[1] Source - Saskatchewan Milk Control Board.

[2] Fluid and Industrial combined.

TABLE 19

BREAKDOWN OF CREAM PRODUCERS BY SIZE OF M.S.Q., 1983/84[1]

NUMBER OF PRODUCERS	M.S.Q. - KGS OF BUTTERFAT
1,695	0 - 419
668	420 - 1,500
42	1,500 - 2,500
7	2,500 - 3,500
1	over 3,500
2,413	

[1] Source - Saskatchewan Milk Control Board.

The production of farm separated cream is still declining rapidly. This segment of the industry now constitutes 16% of total industrial milk production and about 9% of total milk production. The average volume of cream delivered per producer in 1984-85 was 361 kg (Table 5). This amount of cream would be produced by two or three cows. It amounts to less than one litre per day (average producer per farm) which means that many cream producers will be producing less than half this amount. The majority (1695) of cream producers hold less than 420 Kg of M.S.Q. in butterfat (Table 19).

Obviously, this very low volume production by a large number of producers constitutes a serious problem for processors. As might be expected, quality is bad in many cases and use of staff and equipment for cream processing is relatively inefficient. In addition to the problem of efficiency of use of staff and equipment at the plant, the large number of low volume producers constitutes a transportation problem. This problem, however, has been resolved on the basis of cream producers being made responsible for organizing their own cream deliveries.

While Saskatchewan fluid milk producers recognize that cream production is generally a small part of farm income, they are prepared to acknowledge that this segment of steady farm income can be very important to the viability of the farm unit. Income from the average of 361 kg of cream per year will be about $2000 per year. In addition, many milk producers commented during interviews that the industrial milk industry in this province was established

by cream producers and that they must continue to be recognized in developing policy for future development of the industry. Most fluid milk producers support a policy of equal opportunity for cream and fluid milk producers.

(c) The Situation in Other Provinces

Farm separated cream comprises 19% of M.S.Q. in Manitoba, about 11% in Nova Scotia, 8.5% in Alberta and 3.5% in Ontario. Manitoba and Nova Scotia reserve approximately the above percentages of M.S.Q. for cream producers each year while P.E.I. sets a proportion related to anticipated production. British Columbia and Quebec have a negligible amount of cream production. Ontario provides a separate exchange for purchase and sale of M.S.Q. which cream producers can utilize in the same way as fluid milk producers.

(d) Alternatives for Saskatchewan

Perhaps the two most obvious approaches to policy on farm separated cream are:

1. Set quality and minimum volume standards at a level much higher than the present average, or

2. Design policies which will provide an opportunity for gradual improvement for farmers who wish to continue producing farm separated cream as a planned part of their farming program.

The first alternative would certainly shut out a large number of the lowest volume producers. This would be brought about by not having enough quota to increase production to a minimum level of, for example, 500 kg/year. At the present time, 1,695 cream producers, or 70% of the total of 2,413 cream producers, are below this production level. To deny these producers the right to deliver cream would be immediately disruptive to this large number of farmers.

The second alternative is to encourage those who wish to increase cream production, to do so on the basis of a well established policy such as suggested in Alternative I under Part III. Under this policy, all cream producers under 500 kg/year would be invited to apply for quota for this level of production. Four percent of total available quota would be allocated to this objective. If applications to increase to 500 kg/year exceed the quota available, the allocation would be made by draw. Secondly, as has been recommended for fluid milk production, a second portion of available quota (4% suggested) would be allocated to producers over 500 kg/year on a pro rated basis and upon a request to increase. Finally, applications for entry into cream production would be invited and a percentage of available quota (4% suggested) would be utilized for this purpose. Once again, if applicants exceeded

available quota, the rationing would be achieved by making a draw. Any producer successful in receiving quota by means of a draw would not be eligible for another draw until all other applicants had been drawn for quota increase.

Recommendation #11

That the future policy of allocation of quota, for farm separated cream production, be established in regulations designating specific percentages of available quota to be allocated to each of the clearly defined priorities for future development of the cream segment of the industry.

PART VI

SASKATCHEWAN'S SHARE OF NATIONAL MARKET SHARE QUOTA

(a) Terms of Reference

Assess the province's current situation with respect to share of national quota and make recommendations.

b) The Saskatchewan Situation

Saskatchewan currently has a 4.4M kg share of the 170.5M kg national market (Table 2). This is about 2.58% of the national market while Saskatchewan has about 4% of the national population. When the program commenced in 1972, Saskatchewan had a quota for 4.88% of the total amount of industrial milk produced. However, at that time, Canadian production was only 72% of the amount of quota issued.

(c) The Situation in Other Provinces

During the first year after the National Milk Market Sharing Agreement was made in 1972, only 72% of the National Quota was used (Table 2). Between 1972 and 1976, the national quota was cut back 56.4M kg on a butterfat basis. While this cutback was taking place, most provinces were losing quota but Quebec was able to take full advantage of the national program and today P.E.I. and Quebec are the only two provinces with a percentage of market share higher than their provincial percentage of national population (Table 20).

TABLE 20

RELATIONSHIP OF M.S.Q. SHARING AMONG PROVINCES AS A PERCENT OF CANADIAN M.S.Q. AND PROVINCIAL POPULATION AS A PERCENT OF NATIONAL POPULATION.

Province	M.S.Q. As a % of Total[1]		Population as a % of Total[2]		M.S.Q. Compared to Population + or -
	M.S.Q.(kg)	%	Population	%	
P.E.I.	3,160,000	1.88	127,300	0.51	+ 1.37
Nova Scotia	2,107,000	1.26	881,300	3.56	- 2.30
New Brunswick	2,201,000	1.31	791,400	2.91	- 1.60
Quebec	80,018,000	47.67	6,584,200	26.63	+21.04
Ontario	52,152,000	31.07	9,077,100	36.71	- 5.64
Manitoba	6,516,000	3.88	1,070,300	4.33	- 0.45
Saskatchewan	4,337,000	2.58	1,020,000	4.13	- 1.55
Alberta	11,186,000	6.67	2,350,400	9.51	- 2.84
B.C.	6,184,000	3.68	2,894,200	11.71	- 8.03
	167,861,000	100.00	24,724,200	100.00	

[1] Milk Control Board Records 1985

[2] Stats Canada July 1985

While regional economic advantage should be an important principal in determining a share of the national market, the practice of pooling industrial fluid and retail fluid, the wide range of product mix from province to province and transportation and storage costs all tend to make efforts to calculate regional economic advantage somewhat futile. Thus, a procedure for making minor adjustments based on increases or decreases in the national market seems to be the most logical and defensible approach.

(d) Alternatives for Saskatchewan

When Saskatchewan entered the National Milk Market Sharing Program, the amount of quota allotted was 147% of annual production. The additional quota was allocated to enable Saskatchewan to develop a fluid industrial milk sector to replace the rapid declining farm separated cream sector. In addition, this province was given three years of grace to achieve the turnaround in production.

Unfortunately, Saskatchewan was not able to fill the allotted quota within the years of grace provided and the national quota was gradually reduced until roughly equating production in 1976 (Table 2).

The only rational argument Saskatchewan can put forward at this time is that a disproportionately large percentage of any increase in national market should be allocated to those provinces whose market share is less than its share of the national population (Table 16). This approach would not put pressure on any other province to take a decrease in the national market share in order to enable an increase in Saskatchewan.

Other factors such as the rate of increase or decrease in per capita consumption and rate of population growth compared to other provinces should also be taken into account when developing a national formula for sharing general increases or decreases in the national market.

Recommendation #12

That the Saskatchewan Milk Control Board develop and propose to the Canadian Dairy Commission a formula, for sharing decreases and increases in the national market, which will provide disproportionately larger percentage increases and, if necessary, smaller decreases for those provinces whose market share is a smaller percentage of the national market than the provincial population is of the national population.

12.1 That the proposal for a national adjustment formula include measures to adjust for disproportionate changes in per capita consumption and disproportionate rates of change in population.